

*Ligularia* group are the most easily discerned by morphology. They have basal leaves that usually lack callous denticles (small minute teeth) on the margins, small, reduced stem leaves, and are relatively short in comparison to the others; check all groups of *Senecio* to be certain of identification when in doubt.

#### **LIGULARIA GROUP**

These species typically have succulent, often somewhat aromatic leaves. Most occur at high elevations, except for *L. pudica*, which is found in the foothills and lower montane zone.

*Ligularia bigelovii* (A. Gray) W. A. Weber

**Plants** to about 0.5 m, ray flowers lacking. Heads nodding, relatively large, turban-shaped, thick and fleshy and appearing as if they were buds. Leaves lanceolate.

**Habitat:** Montane meadows, aspen groves and other moist sites.

**Notes:** A common species in the moist meadows of middle elevations; the rayless, thick flower heads are quite distinctive.

*Ligularia holmii*(Greene) Weber

**Plants** relatively small, with rounded or cordate basal leaves. Leaves with petioles, tapered to the base, strongly dentate. Reddish tinged on the petioles only. Heads with relatively long yellow ray flowers.

**Habitat:** Alpine tundra, Pikes Peak.

**Notes:** Look for the strongly toothed leaves and the relatively long ray flowers.

*Ligularia pudica* (Greene) W. A. Weber

**Plants** tall, to 0.5 m, ray flowers lacking. Heads nodding, relatively small, turban-shaped. Leaves linear-lanceolate.

**Habitat:** Canyons and rocky hillsides, foothills to montane.

**Notes:** Somewhat resembling *L. bigelovii* but with smaller heads, and occurring in lower drier sites.

*Ligularia taraxacoides* (A. Gray) W. A. Weber

**Plants** low and dwarfed, less than 10 cm, leaves deeply toothed to pinnatifid, with cobwebby pubescence especially around the petioles. Ray flowers present.

**Habitat:** Tundra, often among rocks.

**Notes:** Rare or undercollected in our region. Look for the cobwebby hairs around the petioles.

#### **PACKERA GROUP**

All these species are herbaceous, and some books treat them all under the inclusive genus *Senecio*. However, their different chromosome base number and appearance (generally, though not always, shorter in height, basal leaves with winged petioles, often toothed margins, lack of distinctive stem leaves, and the woody stem bases) are justification for recognizing them at the generic level.

*Packera cana* (Hooker) Weber & Löve

**Plants** with stems usually less than 0.5 m; stems with a few conspicuous stem leaves, otherwise with entire basal leaves (occasionally with lobes) that are obviously woolly hairy (tomentose).

**Habitat:** Meadows, lower elevations to tundra.

**Notes:** Look for the entire basal leaves and white "tomentum", woolly hairs.

*Packera crocata* (Rydberg) Weber & Löve

**Plants** with few stem leaves, those present with enlarged, clasping bases, basal leaves sometimes slightly toothed or lobed; ray flowers bright orange.

**Habitat:** Wet meadows, upper montane to subalpine.

**Notes:** Look for the bright orange ray flowers; uncommon or rare in our region.

*Packera dimorphophylla* (Greene) Weber & Löve

**Plants** with basal leaves with winged petioles; heads several, about 15 mm high; stem leaves few with enlarged, clasping bases. Ray flowers yellow.

**Habitat:** Dry montane and subalpine meadows.

**Notes:** Similar to *P. crocata* but differing in flower color and occurring in drier habitats. Uncommon or undercollected here.

*Packera fendleri* (A. Gray) Weber & Löve

**Plants** to 0.5, basal leaves with wavy margins to deeply pinnately lobed, somewhat folded, white woolly hairy (tomentose). Heads appearing somewhat umbellate, coming from the top of the stem.

**Habitat:** Gravelly areas, foothills to montane.

**Notes:** Look for the deeply pinnately lobed leaves with white tomentum; leaf lobing can be highly variable. This is a very common species.

*Packera neomexicana* (A. Gray) Weber & Löve

**Plants** with stem leaves lacking clasping bases, entire or only slightly dentate; basal leaves tomentose (white woolly hairy) when young but losing pubescence later.

**Habitat:** Gravelly areas, foothills to montane.

**Notes:** Very similar to *P. plattensis* and to *P. tridenticula*, but having entire stem leaves rather than lyrate ones. Both species lose their tomentum in age. These species are likely to hybridize, so can be challenging to distinguish.

*Packera plattensis* (Nuttall) Weber & Löve

**Plants** with stem leaves lacking clasping bases, pinnatisect (divided to the midrib) to lyrate (shaped like a fiddle); basal leaves tomentose when young but losing pubescence later.

**Habitat:** Plains. Distribution in our regions uncertain.

**Notes:** See *P. neomexicana*; *P. plattensis* occurs at lower elevations.

*Packera pseudaura* (Rydberg) Weber & Löve

**Plants** with basal leaves with long petioles, ovate-cordate (heart-shaped), regularly crenate (with rounded teeth) on the margins.

**Habitat:** Wet meadows and streambanks, montane (including higher elevations on the plains). **Notes:** The rounded basal leaves are diagnostic for this wetland species. It is somewhat uncommon here.

*Packera tridenticulata* (Rydberg) Weber & Löve

**Plants** with stem leaves lacking clasping bases, basal leaves narrowly oblanceolate, with a 3-toothed apex.

**Habitat:** Gravelly areas, plains through montane.

**Notes:** This extremely abundant species has a tendency to hybridize with other *Packera* species, but in pure stands, the 3-lobed apex of the basal leaves is diagnostic. Compare with *P. neomexicana* which is a close look-alike, and with which it may hybridize. Distinguishing them is a challenge.

*Packera werneriifolia* (A. Gray) Weber & Löve

**Plants** low and relatively rounded clumps; basal leaves somewhat thick, ovate-lanceolate to elliptic, toothed near the apex. Heads sometime solitary.

**Habitat:** Rocky slopes and talus, boulder fields, subalpine and alpine on Pikes Peak.

**Notes:** One of our high elevation species, common in the mountains.

#### SENECIO: LUGENTES GROUP

Plants generally taller than *Packera*, leaves entire or denticulate, with minute callous teeth (denticles) on the margins.

*Senecio atratus* Greene

**Plants** tall, to about 1 m; usually growing in large groups; leaves long, to 30 cm, somewhat fleshy and marked by black denticles on the margins. Heads small, to about 1 cm in diameter, in clusters at stem ends.

**Habitat:** Rocky slopes, montane to subalpine.

**Notes:** Look for the black-toothed leaf margins.

*Senecio crassulus* Gray

**Plants** to about 50 cm, often growing in clumps; leaves to about 12 cm long, somewhat fleshy, margins slightly toothed; heads few, on long stalks, with few ray flowers.

**Habitat:** Moist areas, stream banks and wet meadows, montane to subalpine.

**Notes:** Look for the few heads with widely spaced ray flowers and the moist habitat.

*Senecio integerrimus* Nuttall

**Plants** to about 0.5 m; stems stout, hollow, and somewhat cobwebby-pubescent, at least when young.

Heads small, about 1 cm in diam., in clusters. Leaves lanceolate, often clasping the stem, grayish.

**Habitat:** Meadows, foothills to subalpine.

**Notes:** Look for the hollow, cobwebby stem and grayish leaves.

*Senecio wootonii* Greene

**Plants** less than 0.5 m, stems usually single or only a few together; glabrous and somewhat glaucous (with a whitish coating), lower leaves oblanceolate to ovate, entire to sinuate dentate (with wavy teeth); stem leaves few. Heads relatively few, to about 2 cm in diam.

**Habitat:** Dry forests, montane.

**Notes:** Look for the few stems, with a glaucous appearance.

**SENECIO: TRIANGULARES GROUP**

Plants relatively tall, single or few-stemmed (except for *S. fremontii*), with broad leaves more or less equal in size throughout the stem.

*Senecio eremophilus* Richardson ssp. *kingii* (Rydberg) Douglas & Ruyle-Douglas

**Plants** to about 1 m, with leafy stems; leaves pinnately lobed or deeply cut in an irregular fashion; heads multiple; to about 2 cm in diam.

**Habitat:** Gravelly areas, especially along trails and roadsides, foothills to subalpine.

**Notes:** Look for the pinnately lobed leaves.

*Senecio fremontii* Torrey & Gray var. *blitoides* (Greene) Cronquist

**Plants** low, succulent, and many stemmed (anomalous for this group) with multiple leaves; leaves ovate, succulent, to about 3 cm long; margins coarsely dentate.

**Habitat:** Rocky areas, including talus and boulder fields, subalpine to alpine.

**Notes:** Look for the low, bushy growth habit, and coarsely toothed, succulent leaves.

*Senecio serra* Hooker

**Plants** to about 0.5 m, stems with lanceolate leaves, margins finely serrate-dentate.

**Habitat:** Streamsides, moist areas, foothills to montane.

**Notes:** Uncommon in our region; look for the finely toothed leaves.

*Senecio triangularis* Hooker

**Plants** to almost 2 m tall, stems stout, clumped, with broadly triangular leaves, to about 30 cm long, coarsely toothed.

**Habitat:** Moist areas, montane to subalpine.

**Notes:** A very large distinctive species; look for the tall stems and triangular leaves.

**SENECIO: SUFFRUTICOSI GROUP**

Plants growing in mid-sized (0.5-1 m) bushy clumps, leaves linear, sometimes pinnately divided. The term "suffrutescent" means partially woody (at the stem base).

*Senecio flaccidus* Lessing var. (DC) Turner & Barkley

**Plants** with woolly, tomentose leaves, sometimes somewhat divided.

**Habitat:** Dry plains, generally in the southern part of our region but known as far north as Fountain.

**Notes:** Look for the prominent woolly pubescence on the leaves.

*Senecio multicapitatus* Greenman

**Plants** with pinnately divided leaves lacking woolly tomentum; heads very small, less than 5 mm in diam.

**Habitat:** Sandy areas, mostly on the West Slope, but one historical collection from Teller County.  
**Notes:** Look for the very small heads, and irregularly pinnatifid leaves. A similar species, *S. riddellii*, has pinnately divided leaves and much larger heads. It also grows in sandy soils, and may occur in our region although it has not yet been documented here.

*Senecio spartioides* Torrey & Gray

**Plants** with simple, glabrous (lacking hairs) leaves. Heads about 3 cm in diameter, bright yellow.

**Habitat:** Plains grasslands, mesas, to the lower montane.

**Notes:** Extremely common in late summer. The bushy clumps with bright yellow flowers and long narrow leaves are very noticeable at the time of year when the rabbitbrush blooms.

#### "TRUE" *SENECIO*

*Senecio vulgaris* L.

**Plants** annual, lacking ray flowers, stems low and sprawling. Leaves somewhat succulent, pinnatifid.

**Habitat:** Gardens, waste areas.

**Notes:** This is the only representative of the broad *Senecio* group that is clearly affiliated with the type species for the genus. It is very different, and quite distinctive with its annual growth habit, and rayless heads. It is an extremely common adventive weed in gardens, and blooms early, especially where the soil is moist from sprinklers.

#### *Shinnersoseris* "skeletonweed"

Some botanists place this genus in with a broader concept of *Lygodesmia*.

*Shinnersoseris rostrata* (Gray) Tomb.

**Plants** annual, usually less than 0.5 m, with stiff wiry branches. Flowers in pinkish heads. Leaves much reduced in size to almost scales on the upper branches. Pappus bright white.

**Habitat:** Grasslands on the plains.

**Notes:** Apparently uncommon in our area, or perhaps mistaken for the common lookalike species, *Lygodesmia juncea*. See comments under *Stephanomeria* for how to tell *Stephanomeria*, *Lygodesmia*, and *Shinnersoseris* apart.

#### *Silphium* "compass plant"

*Silphium laciniatum* L.

**Plants** deeply taprooted, stems very tall, to 2 m or more. Leaves leathery, up to 30 cm long, deeply notched nearly to the midrib. Stem leaves alternate, becoming smaller. Ray flowers yellow, to 5 cm long. Disk flowers dark brown to black.

**Habitat:** Moist prairie, historical record only.

**Notes:** The common name of this extremely tall species refers to the frequent north-south orientation of the leaves. The species is common on the Great Plains, but known in Colorado only from a population in Palmer Lake which is now extinct. It is possible but very unlikely that the species still exists as a native in our region since much of its habitat has been disturbed due to development; however, the seeds are readily available horticulturally and it may be re-established from garden plants.

#### *Solidago* "goldenrod"

*Solidago* is a late summer yellow composite, readily recognized to genus by the arching spikelike inflorescence of small heads. *Senecio* is a somewhat look-alike genus, but always with larger heads. Basal and stem leaves, hair patterns, and size of the plants are all important for identification purposes. See also the genus *Euthamia*, a goldenrod-like genus with very narrow leaves and a flat-topped inflorescence. *Unamia alba* (sometimes called *Solidago ptarmicoides*) has also been linked to the goldenrods, but is very distinctive with its white ray flowers and very different appearance overall-it appears much more like an *Aster* than a goldenrod.

*Solidago canadensis* L.

**Plants** to 1.5 m, stems pubescent, leafy throughout with an inflorescence in a spreading, in a somewhat one-sided group of heads. Leaves somewhat leathery, margins serrate.

**Habitat:** Wet meadows, streambanks, moist canyons, lower elevations from plains to lower foothills.

**Notes:** A characteristically robust and leafy species with a broad, spreading inflorescence.

*Solidago gigantea* Aiton

**Plants** tall, up to 2 m, stems glabrous, leafy, with inflorescence spreading, somewhat one-sided. Leaves lanceolate, margins serrate.

**Habitat:** Wet meadows, streambanks, lower elevations from plains to lower foothills.

**Notes:** Somewhat similar to *S. canadensis*, but taller and with glabrous stems.

*Solidago missouriensis* Nuttall

**Plants** to about 0.5 m. Stems clumped, glabrous (lacking hairs), with oblanceolate lower leaves, upper leaves reduced in size. Inflorescence spreading, somewhat one-sided.

**Habitat:** Dry or rocky areas, plains through montane.

**Notes:** An extremely common species; look for the clumped growth habit, and smaller upper leaves in comparison to the lower ones.

*Solidago mollis* Bartling

**Plants** to about 0.5 m, stems leafy, lacking basal leaves at flowering and with middle stem leaves the largest. Stems and leaves with uniform short hairs; heads in an oblong spike, at top of the stem.

**Habitat:** Plains, lower foothills.

**Notes:** Look for the soft pubescence on the leaves, and the lack of basal leaves at flowering. The inflorescence is much less branched than in other species.

*Solidago multiradiata* Aiton var. *scopulorum* A. Gray

**Plants** relatively short, usually 0.3 m or usually less at higher elevations. Stems growing in clumps, somewhat reddish; leaves mostly basal, with petiole bases containing ciliate (short stiff hairs) margins. Heads in narrow, unbranched, looking rather lumpy.

**Habitat:** Open areas, rocky slopes, montane to subalpine, occasionally on the tundra.

**Notes:** Common, similar to *S. simplex* but with larger heads; look also for the diagnostic ciliate petioles.

*Solidago nana* Nuttall

**Plants** to about 0.5 m, stems and leaves short pubescent. Stems with basal leaves at flowering; stem leaves reduced in size upwards. Heads in an oblong spike at the top of the stem.

**Habitat:** Plains, lower foothills.

**Notes:** Similar to *S. mollis*, but with basal leaves at flowering.

*Solidago nemoralis* Aiton

**Plants** to about 0.5 m, basal leaves oblanceolate to spatulate (like a spatula), upper stem leaves smaller. Basal rosette present at flowering time; leaves with 1 prominent vein. Heads in spreading.

**Habitat:** Canyons, foothills.

**Notes:** Similar to the more common *S. velutina*, but with 1 single vein in the basal leaves.

*Solidago rigidum* L.

Syn. *Oligoneuron rigidum*

**Plants** to about 1 m in, stems stout, densely hairy. Leaves oblong to ovate, very thick and rigid, pubescent on both surfaces. Heads in dense flat topped clusters (cymes).

**Habitat:** Lower foothills, plains and Black Forest meadows.

**Notes:** A characteristic and common species of the lower elevations in late summer. The pubescent stem and thick rigid leaves are diagnostic.

*Solidago simplex* Humboldt, Bonpland, & Kunth

Syn. *Solidago spathulata* var. *neomexicana*.

**Plants** to about 0.5 m. Stems with mostly basal leaves, leaves oblanceolate to spatulate (spatula-shaped); petiole bases lacking stiff ciliate hairs.

**Habitat:** Montane and subalpine zones, meadows, and forest openings.

**Notes:** Very similar to *S. multiradiata*, but lacking the ciliate petiole bases.

*Solidago speciosa* Nuttall var. *pallida* T. C. Porter

**Plants** to about 80 cm. Stem and leaves glabrous (lacking hairs), leaves obovate to lanceolate, entire, pale on lower surface.

**Habitat:** Gravelly slopes, foothills

**Notes:** Look for the pale coloration on the lower leaves especially, but the whole plant tends to have a more blue-green coloration than other *Solidago* species.

*Solidago velutina* de Candolle

Syn. *Solidago sparsiflora*

**Plants** to about 80 cm, in clumps with somewhat wiry stems. Heads 1-sided, flowers small, relatively few. Basal leaves ovate but usually not present at flowering time; stem leaves smaller; leaves with 3 prominent veins.

**Habitat:** Lower foothills, plains.

**Notes:** Look for the 3-veined leaves and lack of basal rosette at flowering time.

### ***Sonchus* "sow thistle"**

*Sonchus arvensis* L.

**Plants** perennial, growing from spreading horizontal rootstocks, stems to 1 m. Leaves lanceolate, deeply lobed with prickly margins and clasping the stem with backward pointing lobes. Flowers yellow, involucre broadly campanulate (bell-shaped), somewhat glandular.

**Habitat:** Gardens and fields.

**Notes:** Adventive species, very similar to *Lactuca serriola*, but differing in the shape of the involucre. See comments under *Lactuca*. This is a common weed.

*Sonchus asper* (L.) Hill

**Plants** annual, stems often over 1 m. Leaves shallowly lobed, with a prominent rounded basal lobe clasping the base and prickly margins. Flower yellow, involucre broadly rounded at the base.

**Habitat:** Roadside, fields, and gardens.

**Notes:** Common adventive species; look for the rounded clasping base on the leaves.

*Sonchus oleraceus* L.

**Plants** annual, stems over 1 m. Leaves deeply lobed, with prickly margins. Base of leaves pointed, clasping the stem and bent backwards. Flowers yellow, involucre broadly bell-shaped (campanulate), glabrous (lacking hairs) and not glandular.

**Habitat:** Roadsides, fields, and gardens.

**Notes:** Common adventive species in fields and gardens. Most similar to *S. arvensis*, but distinguished by its annual growth habit and the lack of glands or hairs on the involucre (use a lens).

### ***Stephanomeria* "wire lettuce"**

*Stephanomeria pauciflora* (Torrey) Nelson

**Plants** perennial, up to 0.5 m, with stiff ascending branching. Leaves linear, with slight toothing. Heads solitary or few on the branches; involucre about 1 cm high with a brownish pappus.

**Habitat:** Grasslands and lower foothills.

**Notes:** *Stephanomeria* is very common, and has a stiff look. It resembles two other species: the much less common *Shinnersoseris*, which is an annual (check whether there is a substantive root system or not) and has a whitish, not tawny brown, pappus, and another stiff, skeletal-looking perennial, *Lygodesmia juncea*, which has simple, not plumose bristles in the pappus. The bristles are a dirty whitish color, but not tawny as in *Stephanomeria*.

### ***Tanacetum* "tansy"**

*Tanacetum vulgare* L.

**Plants** tall, often to 2 m. Leaves aromatic, alternate, pinnately compound with toothed margins on segments. Heads in flat-topped umbellate clusters, bright lemon yellow.

**Habitat:** Adventive species of roadsides and disturbed areas, but aggressively spreading.

**Notes:** This occurs as a garden escapee and is common in xeriscape mixes. It is a problematic weed elsewhere in Colorado, and may become so here. Look for the big robust growth, bright yellow flowers and aromatic leaves.

#### ***Taraxacum* "dandelion"**

Dandelions are usually instantly recognizable, but watch out for mistaking some of our dandelion look-alikes for the common *T. officinale* (see especially *Krigia* which is rare, *Agoseris glauca* which is very common, or *Nothocalais*). *Taraxacum officinale*, the ubiquitous adventive common dandelion, occurs in all habitats, and is immediately recognizable by its large yellow heads with recurved (back-bending) phyllaries below. Other dandelion species are native in our mountains and lack the recurved phyllaries. Although *T. ovinum* is the only other dandelion documented thus far in our region, *T. scopulorum*, a tiny alpine boulder field species with lyrate leaves and blackish phyllaries, and *T. eriophorum*, a small tundra species with brownish hairs in the leaf axils, may be present here on Pikes Peak and simply not yet collected.

*Taraxacum officinale* G. H. Weber ex Wiggers

**Plants** diverse in size and leaf characters, but always with basal rosette of glabrous, somewhat lobed or divided leaves, and few large yellow heads with greenish black recurved phyllaries below.

**Habitat:** Abundant in all elevations.

**Notes:** One of our most common species in virtually all habitats. It forms asexual populations that are highly variable in morphology. The recurved phyllaries are characteristic of this species, but not of other species of dandelion.

*Taraxacum ovinum* Rydberg

**Plants** resembling *T. officinale*, but with appressed rather than recurved phyllaries, and distinctive horn-shaped swellings on the phyllary tips.

**Habitat:** Tundra and subalpine meadows.

**Notes:** Relatively common. Look for the "horns" on the phyllaries.

#### ***Tetradymia* "horsebrush"**

*Tetradymia canescens* de Candolle

**Plants** low, bushy, and stiffly-branched shrubs, white hairy throughout. Leaves alternate, narrowly lanceolate to linear, often with clusters in the leaf axils. Involucres with few flowers, yellow.

**Habitat:** Meadows, middle elevations, especially in Teller and Fremont Counties.

**Notes:** Similar in appearance to a low, gray, hairy *Chrysothamnus* but with a stiff, overall hairy appearance and smaller flower heads.

#### ***Tetraneuris* "actinia, perky Sue"**

*Tetraneuris acaulis* (Pursh) Greene.

Syn. *Hymenoxys acaulis*

**Plants** perennial from a multiheaded woody caudex (branched stem at or just below ground level), with stems to about 20 cm. Leaves basal, entire or divided, with silky pubescence. Ray flowers yellow, tips 3-lobed, to about 1 cm long, occasionally lacking.

**Habitat:** Plains grasslands, mesas, barrens, and rock outcrops, similar habitats on rocky areas of the lower foothills.

**Notes:** An extremely common and variable species. A relatively common form occurs that lacks ray flowers. This seems to be most abundant in the Arkansas River valley.

*Tetraneuris brevifolia* Greene

**Plants** densely caespitose (tufted) cushions, with stems lacking or extremely short. Ray flowers yellow, tips 3-lobed, to about 1 cm long.

**Habitat:** Alpine tundra, rocky ridges in the montane.

**Notes:** Typically a somewhat uncommon alpine species of Pikes Peak, but also occurring at lower elevations in the Tarryall Mts.

*Tetraneuris ivesiana* Greene

**Plants** with stems to 30 cm. Leaves basal, similar to *T. acaulis* except for the height.

**Habitat:** Grasslands, Black Forest.

**Notes:** A somewhat mysterious species, known mostly from regions to our west, but a form strongly resembling that species has been collected several times in the Black Forest. The degree of variability that occurs in the *T. acaulis* complex suggests that this may be one extreme form of that species, but currently it is kept distinct under its own species name.

#### ***Thelesperma* "threadleaf"**

The genus *Thelesperma* can always be identified by its distinctive phyllaries, which consist of a double row where the outer ones are linear and spreading, and the inner ones broad, fused bracts that look like a cup.

##### *Thelesperma filifolium* (Hooker) A. Gray

**Plants** variable in height, occasionally up to 0.5 m but usually shorter. Leaves deeply divided into narrow segments, ca. 2 mm wide and about 3 cm long. Stems with leaves scattered along the stems. Heads with ray flowers, ray flowers yellow, slightly drooping, ca. 1 cm long.

**Habitat:** Dry grasslands, plains to lower foothills.

**Notes:** Our most common species, blooming in early summer and often forming bright displays on the grasslands. The presence of stem leaves and ray flowers distinguishes it from the other species in the genus.

##### *Thelesperma megapotamicum* (Sprengel) Kuntze

**Plants** up to 40 cm. Leaves deeply divided, segments filiform. Heads ray flowers lacking, or extremely short.

**Habitat:** Dry grasslands, plains to lower foothills.

**Notes:** Blooms later in the summer than *T. filifolium*, and characterized by its rayless heads.

##### *Thelesperma subnudum* A. Gray

**Plants** up to 40 cm. Leaves mostly basal, deeply divided, segments filiform, Heads with yellow ray flowers, ca 1 cm long.

**Habitat:** Grasslands and barrens, southern portion of our region, primarily known from Pueblo and Fremont Counties.

**Notes:** This species is common in the very southern portion of Colorado, but does not appear to be particularly abundant in the Pikes Peak region except in the southern portions. The primarily basal leaves distinguish it from *T. filifolium*, which has prominent stem leaves.

#### ***Tonestus* "pygmy goldenweed"**

##### *Tonestus pygmaeus* (Torrey & Gray) A. Nelson

**Plants** forming low cushions with a woody caudex (branched stems at or just below ground level); leaves narrowly spatulate (like a spatula), thick, pubescent with long hairs. Heads single, about 2 cm in diam. Phyllaries obtuse.

**Habitat:** Rocky areas on the tundra.

**Notes:** A distinctive tundra species with flower heads on short stems. Another species, *Tonestus lyallii*, occurs in the central mountains but has not been collected on Pikes Peak. It differs in having taller, erect stems rather than a cushion growth form and both stem and leaves are noticeably glandular.

#### ***Townsendia* "Easter daisy"**

The early blooming species of *Townsendia* are a common and welcome sight in early spring on the mesas and foothills. They differ from true daisies (*Erigeron*) in growing as low, bushy clumps and in having a pappus of rigid bristles.

##### *Townsendia excapa* (Richardson) Porter

**Plants** very low, appearing as stemless clumps. Leaves linear, heads single, about 3 cm in diameter, ray flowers pink to whitish. Phyllaries narrowly linear, lacking a tuft of hairs at the apex.

**Habitat:** Gravelly open slopes, grasslands, foothills and mesas.

**Notes:** A common early spring flower; it is difficult to distinguish from *T. hookeri*, but look for the cilia (the tuft of hairs) to distinguish them.



*Townsendia fendleri* A. Gray

**Plants** flattened on the ground, stems branched and sprawling. Heads less than 3 cm in diameter. Ray flowers white, often with a strong pinkish cast below.

**Habitat:** Dry hillsides, Arkansas River drainage and lower foothills on the west side of Pueblo County.

**Notes:** The full distribution and occurrence of *T. fendleri* in our region is uncertain.

At best, it is rare in our area, and mostly known from Chaffee County. There are a few collections from western Fremont County, with questionable occurrences also in Pueblo County. Look for the distinctly smaller flowers and the pinkish coloration (at least when dry) than the lookalike *T. grandiflora*, which is common here.

*Townsendia grandiflora* Nuttall

**Plants** usually somewhat sprawling or erect, but with stem tips at least somewhat erect, with basal leaf rosettes and often branching stems. Heads large, usually over 4 cm in diameter, ray flowers white to pinkish.

**Habitat:** Plains hillsides, foothills to lower montane.

**Notes:** Look for the large heads (although, in dry conditions the heads may be smaller) This is a common species, often occurring in pinon-juniper communities on rocky slopes with open areas.

*Townsendia hookeri* Beaman

**Plants** very low, appearing as stemless clumps. Leaves linear, heads single, about 3 cm in diameter, ray flowers white to pale pink. Phyllaries narrowly linear, with a tuft of hairs at the apex.

**Habitat:** Foothills, plains, often on rocky outcrops at lower elevations.

**Notes:** A common spring wildflower and difficult to distinguish from *T. exscapa*-look for the hairs at the apex of the phyllaries.

***Tragopogon* "salsify, goatsbeard"**

*Tragopogon dubius* Scopoli

**Plants** up to 1 m, usually somewhat shorter. Stem below the head swollen; leaves narrow, undivided. Ray flowers pale lemon yellow, shorter than the phyllaries.

**Habitat:** Disturbed areas, especially in the lower elevations but extending into the montane and subalpine.

**Notes:** Common, especially around dwellings and towns, but often in open grasslands as well. Our three *Tragopogon* species are distinguished by size and color: *T. dubius* has the small flower and longer phyllaries; *T. pratensis* has a large head, and *T. porrifolius* has purple rather than yellow ray flowers. It can sometimes hybridize with *T. dubius* and produce unusually pale flowers. All three are adventive in North America, but common in all elevations except the high tundra.

*Tragopogon porrifolius* L.

**Plants** less than 1 m. Stem below the head swollen. Ray flowers purple, longer than the phyllaries.

**Habitat:** disturbed areas, fields, at lower elevations.

**Notes:** Uncommon in our area; see *T. dubius*.

*Tragopogon pratensis* L.

**Plants** up to 1 m, usually somewhat shorter. Ray flowers bright yellow, head several centimeters in diameter. Phyllaries shorter than the ray flowers.

**Habitat:** Grasslands, plains to montane or subalpine.

**Notes:** Common adventive species, and often abundant from the foothills to the subalpine. This species most closely resembles *T. dubius*, and the two can be almost impossible to distinguish when in fruit.

***Unamia* "prairie goldenrod"**

The common name for this species is misleading, since it resembles a white aster much more than a goldenrod (*Solidago*). It is one of the relictual Midwest prairie species, common here around the Black Forest and on the higher elevation plains around Peyton and Falcon, but uncommon to rare elsewhere in Colorado. The generic designation has moved between *Aster*, *Solidago*, and *Unamia*-botanists are having difficulty finding a consensus! It is a distinctive taxon, and is segregated here on the basis of its morphology. Check the differences with some of the white flowered asters described below, as these are easily confused.

*Unamia alba* (Nuttall) Rydberg

Syn. *Solidago ptarmicoides*; *Aster ptarmicoides*

**Plants** perennial, stems to about 0.5 m, often multiple. Stems leafy with narrowly lanceolate leaves. Heads with creamy white ray flowers, and creamy yellow, not bright yellow disk flowers. Ray flowers about 1 cm long.

**Habitat:** Grasslands, usually in sandy to gravelly soil, often but not exclusively in wetlands; primarily known from the Black Forest and eastern El Paso County, but also collected in moist grasslands of Teller County.

**Notes:** This species resembles one of the leafy white asters, but is distinguished by its paler centers and longer ray flowers. It has fewer leaves than any of the species in the *Aster ericoides/falcatus/porteri* group, although it often grows with them. It is quite common in eastern El Paso County. Look for the creamy yellow (not bright yellow) centers and comparatively larger heads.

#### ***Verbesina* "cowpen daisy"**

*Verbesina encelioides* (Cav.) Bentham & Hooker

Syn. *Ximenesia encelioides*

**Plants** annual, tall, often to 2 m or more. Stems stout, often branched, leafy, with leaves mostly alternate, up to 10 cm long, rhombic-triangular with toothed margins; lower surfaces usually white pubescent, and appearing gray-green in color. Flower heads single, heads to about 4 cm in diameter, ray flowers yellow, disk flowers yellowish or yellowish orange.

**Habitat:** Roadsides and disturbed areas, mostly at lower elevations.

**Notes:** A coarse adventive species, resembling *Helianthus*, but distinguished by the leaf morphology and more yellowish disk flowers. Look for the rhombic-triangular leaves. Leaves are usually (but not always) notably white hairy beneath.

#### ***Vernonia* "ironweed"**

*Vernonia marginata* (Torrey) Rafinesque

**Plants** perennial, stems leafy, to about 80 cm; leaves linear to lanceolate, entire or minutely toothed, punctate especially on lower surfaces. Inflorescence flat-topped, ray flowers lacking, disk flowers purple or rose colored; pappus double: inner of long capillary bristles and outer of short scales or bristles. Blooming late summer to early fall.

**Habitat:** Grasslands, in open gravelly soils.

**Notes:** This is a distinctive species with the rose-colored, flat-topped inflorescence. There is only one known native occurrence in our region, from the Air Force Academy on disturbed grassland. A few other occurrences are known from widely scattered plains locations in Colorado.

#### ***Xanthium* "common cocklebur"**

*Xanthium strumarium* L.

**Plants** tall, usually over 1 m; stems branched, spotted, and scabrous. Leaves large, alternate, triangular to cordate, long petioled. Flowers small, in axils of upper leaves; monoecious. Female flowers producing burs about 3 cm long, with hooked bristles.

**Habitat:** Disturbed areas, plains, foothills to lower montane; often in moist areas, especially drying ponds.

**Notes:** A common adventive species, annoying to ranchers because of the burs that attach themselves to livestock. Look for the tall stems and hooked bristles on the fruits. It is easy to confuse *Arctium* (burdock) with *Xanthium* (cocklebur), as vegetatively they look alike with big heartshaped leaves and grow in similar disturbed areas. In *Xanthium*, the plants are annuals, the male and female flowers are separate, and the fruits (elongated ovals) are spiny. *Arctium* is a biennial with bisexual flowers; the phyllaries on the globose involucre below the head are the spiny portion.

#### ***Zinnia* "plains zinnia"**

*Zinnia grandiflora* Nuttall

**Plants** perennial, low, much branched and somewhat woody at the base. Leaves narrowly linear-lanceolate, to about 2 cm long, typically somewhat twisted. Margins entire. Flower heads numerous, ray flowers somewhat broad, yellow, drooping, persistent in age. Disk flowers reddish in color.

**Habitat:** Sandy areas on the plains.

**Notes:** Common in the early summer on the plains. Look for the twisted leaves when not in bloom.

### Balsaminaceae: Jewelweed Family

The balsam or jewelweed family has only one representative here, but it is a beautiful addition to our flora, even if perhaps not a native species. The family is characterized by having 3-5 sepals forming a spur, a zygomorphic flower, and explosive capsules that burst when touched, dispersing seeds in the process.

#### *Impatiens* "jewelweed"

*Impatiens capensis* Meerburgh

**Plants** with watery, translucent stems, to about 1 m. Leaves alternate, petiolate, ovate, margins coarsely dentate, blades often tinged with purple. Flowers zygomorphic, orange to reddish. Fruit an explosive capsule.

**Habitat:** Irrigation ditches, wetlands.

**Notes:** A very distinctive species, with leaves that glitter when underwater. Currently known only from Fountain Creek drainage south of Colorado Springs. This is generally an eastern species, so it is not clear whether our populations are introduced or relicts of a former distribution when wetlands were more common than they are now.

### Berberidaceae: Barberry Family

The barberry family is represented by a single genus here. *Mahonia*, a genus with low bushy branches carrying holly-like leaves, is distinctive for the family. *Mahonia* is sometimes now treated under *Berberis*, as *Berberis repens*. This species is uncommon on the Pikes Peak massif, but quite common to our north around the Palmer Divide and to the south in western Pueblo County and the Wet Mountains. The genus *Berberis* (barberry) has not yet been collected here but may be present in southwestern Pueblo County or Fremont County. It is characterized by having simple deciduous leaves rather than compound evergreen ones as seen in *Mahonia*.

#### *Mahonia* "holly grape, Oregon grape"

*Mahonia repens* (Lindley) G. Don

Syn. *Berberis repens*

**Plants** low, bushy branched from the base; leaves evergreen, compound, leaflets with spiny margins like holly. Flowers in clusters, yellow; fruit a purple berry.

**Habitat:** Montane zone, foothills, Black Forest. Often in burn areas, and as an understory species of the pine forest.

**Notes:** A very distinctive species and locally common where it occurs. Look for the holly-like leaves.

### Betulaceae: Birch Family

The birch family is much less diverse here than in the Northeast, but its representatives are common components of cool moist habitats. Look for shrubs growing in wet habitats carrying catkin flowers like willows, but with ovate, often lobed, leaves. The pore structures of the bark, appearing as light stripes called "lenticels" are often very apparent.

#### Key to the Genera

1. Shrubs with all flowers in catkins; female flowers producing a nutlike fruit; leaves roughly pubescent.....*Corylus*
1. Shrubs with only male flowers in catkins; female flowers producing a cone-like structure.....2
2. Female cones woody and persistent.....*Alnus*
2. Female cones papery.....*Betula*

#### *Alnus* "alder"

*Alnus incana* (L.) Moench ssp *tenuifolia* (Nuttall) Breitung

**Plants** tall shrubs to small trees, often up to 5 m tall. Leaves alternate, ovate, lobed, to ca 5 cm in diameter; margins doubly-toothed, blades somewhat wrinkled. Female flowers producing woody, persistent cones.

**Habitat:** Foothills canyons and montane, along streams.

**Notes:** A very common species. To distinguish it from birch, look for the woody cones and wrinkled appearance of the leaves that are double-toothed on the margins.

### ***Betula* 'birch'**

*Betula fontinalis* Sargent

Syn. *Betula occidentalis*

**Plants** tall shrubs to small tree, usually to 3 m or less in height. Leaves alternate, ovate, somewhat lobed to 5 cm in diameter; margins with single teeth, blades not wrinkled. Female flowers producing papery cones.

**Habitat:** Foothills canyons and montane, along streams.

**Notes:** Often grows with alder; to distinguish the two

check the cones and leaves. The hybrid species *Betula andrewsii* Nelson has been documented both in our area and in Boulder. This represents a cross between *B. fontinalis* and the rare (in Colorado) eastern species *B. papyrifera* (paper birch). Our representatives (known from a few, wet canyons here) tend to be intermediate in morphology between paper birch and our river birch—the bark peels more easily than in *B. fontinalis* and the stems are more single than multiple. In Boulder, the hybrids are closer in appearance to paper birch, with pale, peeling bark.

*Betula glandulosa* Michaux

**Plants** low shrubs. Leaves ovate, ca 1 cm in diameter or less; margins crenate. Stems resinous glandular.

**Habitat:** Wet bogs, subalpine and lower alpine tundra.

**Notes:** Common at treeline in wet willow bogs. The ovate leaf shape is diagnostic and unmistakable.

### ***Corylus* "hazelnut"**

*Corylus cornuta* Marshall

**Plants** tall shrubs to small trees, usually to 5 m or less in height. Leaves alternate, ovate, bases almost cordate, tip acuminate (in an extended point). Male catkins pendulous (drooping); female flowers headlike, enclosed in a scaly bud with red anthers protruding; fruit nutlike with a long, tubular beak.

**Habitat:** Streamsides, foothills canyons.

**Notes:** Often growing in company with both alder and birch, but with very different female flower structures and fruits. Look also for the acuminate tips on the leaves that are lacking in both birch and alder.

## **Boraginaceae: Borage Family**

The borage family is large and diverse, with representatives consisting of short, alpine cushion plants, tall, leafy meadow plants, and plains or sand dune annuals. Some species have a very distinctive stiff hairy look to them and are easy to recognize. The family is characterized in general by having a 4-lobed ovary that is clearly divided even when young, and which in fruit turns into 4 separate "nutlets" for dispersal—many of these have hooked hairs that cling to socks, animal fur, or pant legs very effectively. The corollas are radially symmetrical, and the leaves alternate. Many species are cultivated and some can be local escapees: *Anchusa* (alkanet) and *Symphytum* (comfrey) are two possible candidates for naturalizing in or around old gardens.

### *Key to the Genera*

1. Leaves very thick, with impressed veins and appressed hairs; corolla lobes closed in a cone around the style; nutlets ivory white.....*Onosmodium*
1. Plants not as above.....2
2. Flowers yellow or greenish yellow.....*Lithospermum*
2. Flowers white, blue or reddish purple.....3
3. Flowers white, sometimes with a yellow "eye" (center).....9
3. Flowers blue, pink, or reddish purple.....4
4. Flowers reddish purple, nutlets broad and flat.....*Cynoglossum*
4. Flowers blue or pink, not as above.....5
5. Plants dwarf alpines forming tight cushions.....*Eritrichum*
5. Plants not as above.....6

6. Inflorescence a slender raceme; flowers mostly lacking leaf-like bracts.....*Myosotis*  
 6. Flowers generally with leafy bracts below.....7
7. Flowers with a well developed corolla tube, limb, and lobes.....*Mertensia*  
 7. Flowers rotate, tube very short.....8
8. Plants perennial, usually over 0.5 m tall; flowers and fruits prominent, with pedicels recurved or reflexed in fruit.....*Hackelia*  
 8. Plants annual, less than 0.5 m tall, flowers and fruits very small, with pedicels erect in fruit...*Lappula*
9. Corolla limb shaped like a pentagon, hardly lobed and appearing somewhat like a morning glory  
 .....*Euploca*  
 9. Corolla limb not as above, distinctly lobed.....10
10. Plants annual, lacking basal leaf rosettes, flowers less than 5 mm in diam, lacking a prominent yellow center.....11  
 10. Plants biennial or perennial, with basal leaf rosettes, flowers more than 5 mm in diam.  
     with a prominent yellow center.....*Cryptantha* "*Oreocarya* group"
11. Plants delicate, somewhat sprawling, growing in wet muddy areas.....*Plagiobothrys*  
 11. Plants not as above, plants of dry sites..... *Cryptantha*

#### ***Cryptantha* "cryptantha"**

A number of botanists combine the annual *Cryptantha* with the perennial *Oreocarya* group under the inclusive *Cryptantha* while others prefer to split the two into separate genera. Although combined here into *Cryptantha*, the distinction is easy to make based on growth habit: look for the leaf rosette and a more substantial root system in the perennial *Oreocaryas*. All are plants found in dry, often disturbed sites, and have a distinctive, stiff and hairy "scratchy" appearance with small, nonshowy flowers.

#### ANNUAL SPECIES

*Cryptantha crassisejala* (Torrey & Gray) Greene

**Plants** growing in clumps to 10 cm; stems several, spreading, with stiff hairs. Flowers very small, white, lacking bracts beneath.

**Habitat:** Low elevations, dry soils, often disturbed sites.

**Notes:** Abundant weedy species, similar to *C. minima* but lacking bracts and having the largest nutlet with minute papillae on the back (use lens or microscope to see the latter character).

*Cryptantha fendleri* (A. Gray) Greene

**Plants** to 0.5 m or less; stems simple below but often branching above, more or less hispid. Inflorescence a bractless spike; flowers minute, white. Nutlets smooth and somewhat shiny, edges rounded and smooth.

**Habitat:** Lowland areas, dry sites on the plains.

**Notes:** A very common species, distinguished by its smooth nutlets with rounded or obtuse edges.

*Cryptantha minima* Rydberg

**Plants** growing in multi-stemmed clumps or more rarely as single stems, less than 20 cm, stiffly hairy. Flowers very small, white, with bracts beneath; largest nutlet smooth.

**Habitat:** Low elevations, dry soils, often in disturbed sites on the plains.

**Notes:** Abundant weedy species. See comments under *C. crassisejala*. *Cryptantha minima* appears to be more common than *C. crassisejala*, but the two are easily confused.

Some reports suggest that an additional species, *C. watsonii*, may also exist on the plains of Colorado. It is very similar to *C. fendleri*, and differs only in having more acutely angled nutlet margins. It is not clear if these names refer to distinct species as the species lines remain unresolved.

PERENNIAL OR BIENNIAL SPECIES "OREOCARYA GROUP"

*Cryptantha cinerea* (Greene) Cronquist

Syn. *Cryptantha jamesii*, *Oreocarya suffruticosa*

**Plants** with stems 10-30 cm, branching from below and often above as well; hirsute and cinereous with obscurely pustulate hairs (containing a blister-like sac at the base). Stem and leaves appearing gray green in color.

**Habitat:** Low elevations, plains grasslands.

**Notes:** A very common and variable species, easily distinguished by the gray color and pustulate hairs. It is typically shorter than *C. thyrsoflora*.

*Cryptantha thyrsoflora* (Greene) Payson

Syn. *Oreocarya thyrsoflora*

**Plants** usually over 30 cm, with a bushy branched inflorescence containing inconspicuous bracts. Stems hairy but less densely so than *C. cinerea*.

**Habitat:** Dry, rocky and sandy areas, plains, barrens of the Arkansas drainage.

**Notes:** The bushy branched "thyrses" inflorescence is a distinguishing feature.

*Cryptantha virgata* (Porter) Payson

Syn. *Oreocarya virgata*

**Plants** usually over 0.5 m; stems erect, leafy and unbranched. Inflorescence a long, conspicuously bracteate spike with white flowers.

**Habitat:** Dry areas, foothills through montane.

**Notes:** A common and distinctive species of the middle elevations; the common name "miner's candle" refers to the long, characteristic flower spike.

***Cynoglossum* "hound's tongue"**

*Cynoglossum officinale* L.

**Plants** biennial, stems to almost 1 m, stout, with soft pubescence. Basal leaves petiolate, oblong to oblong-lanceolate, upper leaves lanceolate, sessile. Corolla trumpet shaped with a long narrow tube that abruptly flares (salverform) to funnellform, to about 1 cm in diam., dull red, coiled in the inflorescence.

**Habitat:** Roadsides, meadows, forest openings in the foothills.

**Notes:** Relatively uncommon adventive species, somewhat problematic and aggressively spreading. The maroon red flowers are very distinctive.

***Eritrichum* "alpine forget me not"**

*Eritrichum aretioides* (Chamisso) de Candolle

Syn. *Eritrichum nanum*

**Plants** low cushions, leaves somewhat thick, silvery hairy. Peduncels to about 1 cm; flowers less than 5 mm in diam., bright blue (rarely white) with a yellow throat.

**Habitat:** Open gravelly soil, alpine tundra, Pikes Peak

**Notes:** A common alpine species of high elevations blooming usually in early summer; the blue color of the flowers is eye-catching and unmistakable.

***Hackelia* "stickseed"**

The genus *Hackelia* is well described by its common name, stemming from the nutlets (mature ovary sections) with upturned prickly rims. The genus as a whole is composed of coarse, weedy looking (often biennial) species, with blue or white flowers in a terminal coil called a scorpioid cyme.

*Hackelia besseyi* (Rydb.) J.L. Gentry

**Plants** biennial, to 80 cm. Stems and leaves gray-strigose pubescent; hairs with bulbous pustulate bases. Inflorescence few-flowered, flowers blue, corolla 4-5 mm in diam.

**Habitat:** Historical report from Cheyenne Canyon west of Colorado Springs.

**Notes:** A southwestern species known in our area only from a historical record; very similar to *H. floribunda*, but with a blister-like base, and a few flowered inflorescences.

*Hackelia floribunda* (Lehmann) I. M. Johnston

**Plants** from 0.5 -1.5 m, stems pubescent. Leaves oblanceolate, to 1.5 cm. Flowers blue to whitish, corolla 4-12 mm wide.

**Habitat:** Roadsides, meadows, in the montane and subalpine.

**Notes:** Common early to midsummer species of the middle elevations.

#### ***Heliotropium* "bindweed heliotrope"**

*Heliotropium convolvulaceum* (Nutt.) A. Gray

Syn. *Euploca convolvulacea*

**Plants** annual, stems 10-40 cm, branched, strigose with stiff hairs. Leaves ovate to lanceolate. Flowers mostly solitary and opposite to leaf-like bracts; corolla white, funnelform, to 15 mm in diam., resembling those of *Convolvulus* (bindweed, morning glory).

**Habitat:** Sandy sites on the plains.

**Notes:** Uncommon in our area but locally abundant on sand blowouts in eastern El Paso and probably northern Pueblo Counties. This genus is sometimes put into its own family, the Heliotropaceae.

#### ***Lappula* "beggar's tick"**

The species in this common weedy genus are all small, delicate-looking, stiffly hairy annuals with small blue to whitish flowers in bracteate racemes. The nutlets are similar to those of *Hackelia*, with prickly rims that stick to pants, socks, and fur easily and annoyingly.

*Lappula occidentalis* (S. Watson) Greene

Syn. *Lappula marginata*, *Lappula redowskii*

**Plants** to about 30 cm, branched from the base or above. Nutlets with an unusual inflated rim resembling a horse collar.

**Habitat:** Open and disturbed areas, plains, foothills.

**Notes:** The "horse collar" appearance of the ripe nutlets is unmistakable. Some botanists separate this group of taxa into two species under the names *redowskii* and *marginata*, but the differences are minimal.

#### ***Lithospermum* "puccon"**

*Lithospermum* species are characterized by their tubular yellow corollas, somewhat similar to those seen in the Phlox family, but with the distinctive 4-parted ovary of the Boraginaceae.

*Lithospermum incisum* Lehmann

**Plants** with corolla tube 3-4 times the length of the calyx, lobes fringed. Corolla yellow, stamens and style at similar heights (flowers not heterostylous). Late flowers often cleistogamous (not opening, self-fertilizing).

**Habitat:** grasslands, mesas, foothills, lower montane meadows.

**Notes:** Common early spring wildflower.

*Lithospermum multiflorum* Torrey ex A. Gray

**Plants** with corolla tube only about twice the length of the calyx, lobes not fringed. Corolla yellow, heterostylous (with 2 floral morphs: the pin morph has a long style above the stamens; the thrum morph has a short style well below the stamens).

**Habitat:** Ponderosa pine forests.

**Notes:** This species blooms in midsummer unlike *L. incisum* and the flowers are of two distinct types (use lens and dissect the flowers).

#### ***Mertensia* "chiming bells"**

Our *Mertensia* species are not very Boraginaceous looking in the sense that they lack the prickly hairs common in many other genera. However, their drooping, blue, bell-shaped flowers (with the 4-parted ovary) are very easy to identify. Within the genus, considerable confusion about species boundaries exists, and the final clarification of species boundaries must await additional genetic information.

*Mertensia alpina* (Torrey) G. Don

**Plants** usually less than 40 cm, stem leaves with 0-2 pairs of lateral veins. Flowers bright blue, tubular, anther filaments attached deeply within the corolla tube and anthers not projecting beyond the throat of the corolla.

**Habitat:** Alpine tundra, Pikes Peak.

**Notes:** The "pure" form of this species has been identified as occurring only on Pikes Peak, however, the highly variable species *Mertensia lanceolata* also occurs in our region. For now, the species is kept distinct, as a Pikes Peak endemic (look for the anther location) but further analysis may suggest its lineage within the *M. lanceolata* complex, along with other narrowly endemic *Mertensia*.

*Mertensia ciliata* (James ex Torrey) G. Don

**Plants** over 50 cm, stem leaves with many pairs of lateral veins, surfaces glabrous. Flowers bright blue, tubular.

**Habitat:** Streamsides, subalpine and alpine.

**Notes:** This common species is relatively tall and robust, with glabrous leaves.

*Mertensia franciscana* Heller

**Plants** over 50 cm, stem leaves with many pairs of lateral veins, surfaces with pustulate-based hairs (with a blister like base). Flowers bright blue, tubular.

**Habitat:** Streamsides, subalpine and alpine.

**Notes:** Currently known from the region just to our south near La Veta Pass, but likely to occur in the Wet Mountains and higher elevations of southern Pueblo County. The base of the leaf hairs is distinctive.

*Mertensia lanceolata* (Pursh) A. de Candolle

Syn. *Mertensia viridis*, *Mertensia bakeri*.

**Plants** less than 40 cm, stem leaves with 0-2 pairs of lateral veins. Flowers bright blue, tubular, anther filaments attached near the top of the corolla tube, with anthers projected out past the throat.

**Habitat:** Alpine tundra through the montane.

**Notes:** This species is widespread and variable. It appears to be reliably distinct from *M. ciliata* with respect to the anther location, but that separation needs to be clarified with genetic analysis. See *M. alpina*.

#### ***Myosotis* "forget me not"**

This garden species has naturalized throughout our canyons and foothills, and is especially common along streamsides. It bears little resemblance to the alpine forget me not (*Eritichum*), although it carries the same common name.

*Myosotis scorpioides* L

**Plants** slender, to about 0.5 m. Flowers small, bright blue, coiled in scorpioid cymes when young, opening further when mature. Leaves primarily on the stem, oblong.

**Habitat:** Moist areas, along streams and rivulets, foothills through montane.

**Notes:** Relatively common around Colorado Springs; adventive but not appearing weedy since it is a relatively graceful plant and not locally abundant when it does occur.

#### ***Onosmodium* "marbleseed"**

*Onosmodium molle* Michaux ssp *occidentale* (Mackenzie) Cochrane

Syn. *Onosmodium bejariense*

**Plants** perennial, stems stout, roughly hairy, to 80 cm. Leaves to 4 cm long, ovate-lanceolate, with deeply impressed veins and appearing ribbed. Flowers creamy white, in coiled clusters. Nutlets bright white, shiny.

**Habitat:** Gravelly slopes, mesas and foothills.

**Notes:** A common and distinctive species of open gravelly soil, often found along roads and trails. The shiny white seeds and deeply veined leaves are very noticeable.

#### ***Plagiobothrys* "popcorn flower"**

*Plagiobothrys scouleri* (Hooker & Arnott) Johnston

**Plants** annual, small and sprawling, leaves opposite below and often alternate above, linear. Flowers white, minute, to about 1.5 mm.



**Habitat:** Muddy pond shores, prairie swales.

**Notes:** A common but very inconspicuous annual, often found near stock ponds on the plains.

### **Brassicaceae: Mustard Family**

The mustard family is easily recognized by its cross-shaped flowers with 4 petals (the old name was Cruciferae) and the superior ovary, which becomes a distinctive fruit called a silicle. There are 6 anthers, 4 tall and 2 shorter ones. The Evening Primrose Family (Onagraceae) also has 4-cross-shaped petals, but always has an inferior ovary and the anthers are at the same height. The Capparaceae (Caper Family) was once included in the Brassicaceae, and is the easiest family to mistake for the mustards. However, the Caper genera differ in having long stipitate (stalked) fruits that lack a central partition (replum), and typically have long exerted anthers. The Brassicaceae members include bad weeds, edible spices, and rare and common native species. They occur in all habitats from the alpine to the plains. Flower colors are typically yellow, white or purple. The fruits are necessary for identification, and it helps to also have flowers. Most species fruit rapidly, so often have both flowers and fruits on the same plant. Some vocabulary is necessary to understand keys to the mustard genera and species:

*Silicle:* The general name for the mustard fruit, where there is a *replum* or partition dividing the ovary sections. Typically a mustard fruit is either short and fat (*silicle*) or long and thin (*siliqua*), and all keys work on this basic distinction. The *replum* either bisects the face of the silicle (look for a line across the broad face of the fruit) or occurs on the edges (face of silicle lacks a line).

- 1. Fruits long, at least 3 times longer than broad.....Key A
- 1. Fruits short, less than twice as long as broad..... Key B

#### **Key A: Plants with siliques, fruits elongate, more than 3 times as long as broad**

- 1. Plants tall and stout, relatively showy with bright yellow flowers; fruits on long stalks.....*Stanleya*
- 1. Plants not as above.....2
- 2. Fruits flattened parallel to the replum.....3
- 2. Fruits rounded, 4-angled or 4-ribbed but not flattened.....7
- 3. Walls of the fruits lacking veins.....4
- 3. Walls of the fruit with veins.....5
- 4. Leaves pinnately compound or triangular cordate; plants of wet areas.....*Cardamine*
- 4. Leaves simple, usually lanceolate; plants of dry to mesic areas.....*Draba*
- 5. Plants perennial, basal leaves present at flowering; fruits typically not erect....*Arabis* (*Boechea* group)
- 5. Plants annual, or biennial, basal leaves withering at flowering; fruits often erect.....6
- 6. Stem leaves glabrous and glaucous (blue green), clasping the stem, basal leaves with simple and forked hairs.....*Arabis* (*Turritis*)
- 6. Stem leaves green, not glaucous, somewhat pubescent.....*Arabis*
- 7. Leaves rounded-ovate, glaucous, entire, rounded at the apex; fruit distinctly 4-angled and 4-ribbed.....*Conringia*
- 7. Plants not as above.....8
- 8. Plants lacking basal leaves, or basal leaves withering early.....9
- 8. Plants with basal leaves or leaves mostly pinnatifid.....13
- 9. Plants smelling of garlic; leaves broadly triangular, ovate, coarsely dentate.....*Alliaria*
- 9. Plants not as above.....10
- 10. Plants perennial, basal leaves lacking; leaves simple, narrowly lanceolate; siliques long and linear.....*Schoenocrambe*
- 10. Plants not as above.....11

11. Flowers large, deep maroon purple; leaves broadly lanceolate.....	<i>Hesperis</i>
11. Flowers small, pale violet to white; leaves narrowly lanceolate to linear.....	12
12. Siliques spreading to erect, not reflexed, distinctly torulose with constrictions .....	<i>Thelypodium</i>
12. Siliques distinctly reflexed, not torulose.....	<i>Pennellia</i>
13. Siliques indehiscent (not splitting), with a long, stout and noticeable beak at tip.....	14
13. Siliques dehiscent (splitting), lacking a prominent beak or with only a short one.....	16
14. Flowers white or yellow, lower leaves pinnatifid (divided to midvein).....	15
14. Flowers pink to purplish, lower leaves only toothed.....	<i>Chorispora</i>
15. Silique walls with 1 vein.....	<i>Brassica</i>
15. Silique walls with 3-7 veins.....	<i>Sinapsis</i>
16. Pubescence forked, stellate, or appearing as straight lines flat on stem or leaves.....	17
16. Pubescence of simple erect hairs or lacking.....	18
17. Hairs straight, appressed to the stem but actually with short stalks below.....	<i>Erysimum</i>
17. Hairs forked or stellate.....	<i>Descurainia</i>
18. Mature fruits somewhat 4-angled; flowers yellow.....	<i>Barbarea</i>
18. Mature fruits terete (rounded); flowers white, yellow or purple.....	19
19. Mature fruit over 3 cm long, slender, plants of dry areas.....	20
19. Mature fruits less than 2 cm long; over 1 mm wide, plants of wet areas .....	21
20. Flowers pale yellow; leaves deeply and regularly pinnatifid.....	<i>Sisymbrium</i>
20. Flowers white or purple; leaves not deeply pinnatifid, sometimes lyrate (with a terminal lobe) or simple .....	<i>Thelypodium</i>
20. Flowers white, leaves somewhat succulent, lobes rounded.....	<i>Nasturtium</i>
20. Flowers yellow, leaves with acute lobes or leaflets, not succulent.....	<i>Rorippa</i>
<b>Key B: Plants with silicles, fruits, short and squat, less than twice as long as broad</b>	
1. Fruits flattened.....	2
1. Fruits not flattened, somewhat spherical to strongly inflated.....	9
2. Fruit flattened parallel to the replum: no "line" apparent on the broad face.....	3
2. Fruit flattened at right angles to the replum; a "line" apparent on the broad face.....	5
3. Fruit round in face view.....	<i>Alyssum</i>
3. Fruit oblong, ovate, or elliptical in face view.....	4
4. Fruit oval to round, styles 2-3 mm, petals white and deeply bilobed.....	<i>Berteroa</i>
4. Fruit elliptical to elongated but not oval, petals white or yellow, not bilobed.....	<i>Draba</i>
5. Fruit elliptical or oval.....	6
5. Fruit triangular-obovate or obovate (heart shaped).....	7
6. Flowers yellow fruits elongated ovals, purple brown, stalks recurved.....	<i>Isatis</i>
6. Flowers white, plants not as above.....	<i>Lepidium</i>
7. Basal leaves pinnatifid (divided to midrib); fruit triangular.....	<i>Capsella</i>

7. Basal leaves entire or toothed; fruit not triangular.....8
8. Plants annual; fruits large, flat orbicular discs with broad wings when mature.....*Thlaspi*
8. Plants perennial; fruits obovate or oblong cuneate (wedge shaped) .....*Noccaea*
9. Fruits inflated, sometimes appearing double.....9
9. Fruits not inflated or appearing double.....10
10. Flowers white; fruits not obviously double.....*Cardaria*
10. Flowers yellow; fruits obviously double with twin sacks.....*Physaria\** (*Lesquerella*)
11. Plants of wet places; leaves deeply pinnatifid (divided to midrib).....*Rorippa sphaerocarpa*
11. Plants of dry sites; leaves not pinnatifid.....12
12. Plants annual; stems simple or branched above, leaves green.....*Camelina*
12. Plants perennial; growing as small to medium cushions, leaves distinctly grey green  
With silvery pubescence.....*Lesquerella \**
- \*Lesquerella and Physaria are now usually combined into Lesquerella.*

#### ***Alliaria* "garlic mustard"**

*Alliaria petiolata* (Bieberstein) Cavara & Grande

**Plants** biennial, to 0.5 m, leaves heart shaped, ovate, margins coarsely toothed. Foliage with a strong garlic odor when crushed. Flowers white, siliques 4-angled, widely divergent on short pedicels.

**Habitat:** Moist creek banks, often in shade.

**Notes:** This adventive species has become very invasive along Fountain Creek and in the vicinity of the Broadmoor throughout Cheyenne Canyon in Colorado Springs and now elsewhere in Colorado Springs. It can be a persistent noxious weed in the Midwest and East, and appears to be increasing in our region.

#### ***Alyssum* "madwort"**

The genus *Alyssum* is a weedy one in our area, with several adventive species common in disturbed areas and roadsides. The small yellow flowers and very round silicles are diagnostic. Note: the common garden plant known as alyssum belongs in the genus *Lobularia*!

*Alyssum alyssoides* L.

**Plants** to about 20 cm, often with spreading stems or branching at the base. Leaves somewhat strap shaped, lacking petioles, covered with stellate pubescence and appearing somewhat grayish. Flowers yellow, fading to white; sepals persistent. Fruits round, with thin wings and a slightly notched apex; hairs present but not prominent.

**Habitat:** Dry areas, roadsides and cutbanks on the plains and through the foothills; adventive.

**Notes:** An extremely common species. Look for the small, round fruits.

*Alyssum desertorum* Stapf

**Plants** to about 20 cm, often with spreading stems. Leaves strap shaped, lacking petioles, covered with stellate pubescence and appearing grayish. Flowers yellow, fading to white; sepals deciduous. Fruits round, with thin wings, totally glabrous.

**Habitat:** Dry areas, roadsides and cutbanks; adventive.

**Notes:** Similar to *A. alyssoides* but with hairless fruits.

*Alyssum murale* Waldenstein & Kitaibel

**Plants** perennial, to ca. 1 m, leaves spatulate, with stellate hairs, appearing bicolored with dense hairs below. Flowers yellow, often appearing after leaves wither.

**Habitat:** Dry disturbed areas, roadsides.

**Notes:** A horticultural species that has become a noxious weed, known from Fremont County. Look for the bicolored leaves with white hairs and perennial growth habit.

*Alyssum simplex* Rudolphi

Syn. *Alyssum parviflorum*

**Plants** to 30 cm, often with spreading stems. Leaves strap shaped, lacking petioles, green. Flowers yellow, fading to white; sepals deciduous. Fruits round with thin wings and a slightly notched apex; prominently pubescent.

**Habitat:** Dry areas, roadsides, cutbanks in the foothills, adventive.

**Notes:** An extremely common species of early spring, often forming dense stands of yellow along roadsides and dying back early.

#### ***Arabis* "rock cress"**

The rock cress group includes both annual species (true *Arabis* and *Turritis*) and the perennial *Boechea* group, which many botanists treat as a separate genus. All have long siliques and small delicate white to purple flowers. To tell the species apart, look at the orientation of the fruits and the amount of hairs on the leaves, as well as the annual vs perennial separation.

#### PLANTS ANNUAL: ARABIS AND TURRITIS

*Arabis hirsuta* (L.) Scopoli

Syn. *Arabis pycnocarpa*

**Plants** over 0.5 m, fruits erect. Flowers with petals 3-5 mm long, white. Leaves notably pubescent; basal leaves often withered at flowering.

**Habitat:** Montane forests, often along trails or in forest openings.

**Notes:** Apparently adventive, but naturalized and common throughout our region. Similar to *Arabis glabra* but hairy throughout.

*Arabis glabra* L.

Syn. *Turritis glabra*

**Plants** relatively stout, over 0.5 m, fruits erect. Flowers whitish yellow to purple, petals 5-7 mm. Basal leaves pubescent but withering by flowering time; stem leaves glabrous.

**Habitat:** Montane forests, often along trails or in clearings.

**Notes:** See notes under *A. hirsuta*. This is a glabrous (hairless) species.

#### PLANTS PERENNIAL: BOECHERA GROUP

*Boechea* is increasingly recognized as a separate and complex genus that is difficult to distinguish morphologically. Plants have simple or forked, not stellate hairs, or may lack hairs. Leaves may have clasping or arrowhead shaped bases.

*Arabis drummondii* A. Gray

Syn. *Boechea drummondii*

**Plants** 20 to 50 cm; fruit stalks stiffly erect. Flowers with petals over 5 mm long, white to pale purple. Leaves glabrous.

**Habitat:** Montane forests

**Notes:** A very common species in the middle elevations. Look for the stiffly erect fruits.

*Arabis fendleri* S. Watson

Syn. *Boechea fendleri*

**Plants** 40-60 cm. Fruit stalks stiffly spreading at right angles to the stem. Flowers usually pink, with petals 5-8 mm long. Basal leaves present at flowering, pubescent.

**Habitat:** Foothills, mesas, occasionally at higher elevations on the plains.

**Notes:** Most common species in the lower foothills and found occasionally on ridges and sandy-gravelly soils of eastern El Paso County. Look for the stiffly spreading fruits. The leaves are often infected by a red-orange rust fungus.

*Arabis retrofracta* Graham

Syn. *Boechea retrofracta*; *Arabis holboellii*

**Plants** less than 30 cm. Fruit stalks curving downward almost parallel to the stem. Flowers with petals 7-10 mm long, white to pinkish. Basal leaves densely gray pubescent.

**Habitat:** Montane to subalpine meadows.

**Notes:** Look for the distinctive down-turned fruits, sometimes extended outward.

***Barbarea* "winter cress, yellow rocket"**

*Barbarea orthoceras* Ledebour

**Plants** erect, 30-50 cm. Leaves dark green, rounded with a few small lobes or leaflets; upper leaves distinctly divided into numerous lobes or leaflets and clasping the stem. Flowers in clusters at the tips of stems, elongating with maturity. Petals yellow, 6-8 mm long; fruits slender, to about 1 cm long, with a beak (stylar remains) 2-3 mm long at maturity and appearing to have a point.

**Habitat:** Wet areas in the lowlands.

**Notes:** Common adventive weed of irrigation areas and wet pastures. The long stout beak on the fruit and larger flowers distinguishes this species from *B. vulgaris*.

*Barbarea vulgaris* R. Brown

**Plants** erect, 30-50 cm. Leaves dark green, rounded with a few small lobes or leaflets; upper leaves distinctly divided into numerous lobes or leaflets and clasping the stem. Flowers in clusters at the tips of stems, elongating with maturity. Petals yellow, 2-3 mm long; fruits slender, to about 1 cm long, lacking a beak or with only a very short one.

**Habitat:** Wet areas in the lowlands; adventive.

**Notes:** Common weed of irrigation areas and wet pastures. The beakless fruit and smaller flowers distinguish this from *B. orthoceras*, which is a more common species.

***Berteroa* "hoary alyssum"**

*Berteroa incana* (L.) de Candolle

**Plants** bushy branched and erect, to about 0.5 m. Leaves lanceolate to oblanceolate, stellate pubescent and gray green in color; entire to shortly petiolate; flowers white, in terminal racemes. Petals deeply 2-lobed, appearing almost divided to the base; fruits ovate to round, with a long prominent style.

**Habitat:** Foothills, montane, in open gravel soils.

**Notes:** Adventive species, particularly common west of Palmer Lake and spreading in disturbed areas and roadsides throughout the foothills.

***Brassica* "mustard"**

The very large genus *Brassica* includes many horticultural species used as food crops, as well as many agricultural weeds. The genus includes turnips, mustard, cauliflower, broccoli, cabbage, and brussels sprouts, as well as our weedy annual representatives. See also *Sinapis*, sometimes called *Brassica klaber*.

*Brassica juncea* L.

**Plants** up to or over 1 m; annual or biennial, stems branched above; leaves glabrous, lyrate pinnatifid, (with a terminal lobe; divided to midrib) with a long petiole. Petals 8-10 mm long, yellow; fruits ascending, not appressed to the stem.

**Habitat:** Fields, moist areas along irrigation lines or ponds; adventive.

**Notes:** Uncommon in our area, or at least little documented. Differs from *B. nigra* in having glabrous leaves and spreading fruits.

*Brassica nigra* L.

**Plants** up to or over 1 m; annual or biennial, stems branched above; leaves somewhat pubescent, lyrate pinnatifid, with a long petiole. Petals 8-10 mm long, yellow; fruits appressed to the stem.

**Habitat:** Fields, moist areas along irrigation lines or ponds; adventive.

**Notes:** Differs from *B. juncea* in having fruits distinctly appressed to the stem, and pubescent leaves.

***Camelina* "false flax"**

*Camelina microcarpa* Andrzejowski ex de Candolle

**Plants** annual, stems to 1 m, usually little branched above. Basal leaves stellate pubescent, clasping the stem, basal leaves withering. Flowers pale yellow, petals to ca 3 mm long. Fruits round, with a prominent style to 3 mm.

**Habitat:** Fields, agricultural areas, roadsides.

**Notes:** Blooms early in the spring; look for the distinctive round, long-styled fruits.

*Camelina rumelica* Velenovsky

**Plants** annual, stems to 1 m. Basal leaves present at flowering. Flowers white outside, pale yellow within, petals to 9 mm long.

**Habitat:** Fields, agricultural areas.

**Notes:** Look for the paler and larger flowers and the basal leaves. Recently reported from Pueblo Co., but probably spreading throughout the plains in agricultural areas.

#### ***Capsella* "shepard's purse"**

*Capsella bursa-pastoris* (L.) Medicus

**Plants** annual, stems to 0.5 m, somewhat branched, stems from a basal rosette. Lower leaves deeply lobed, upper few, entire or toothed and clasping the stem. Flowers white, petals to 2 mm long, on elongate racemes. Fruits heart shaped to triangular.

**Habitat:** Roadsides, fields, disturbed areas.

**Notes:** An extremely common early blooming adventive species. The triangular "shepard purse" fruits are diagnostic.

#### ***Cardamine* "bitter cress"**

*Cardamine cordifolia* Gray

**Plants** perennial, stems to 80 cm; leaves simple, 2-5 cm in diameter, cordate at base, petiolate; usually glabrous but sometimes pubescent. Flowers white, petals 7-12 mm.

Fruits 2-4 cm, erect on ascending pedicels.

**Habitat:** Montane to subalpine, wet areas along streams and around springs.

**Notes:** A common species, quite variable in leaf morphology. Look for the cordate (heartshaped) leaves.

#### ***Cardaria* "whitetop, hoary cress"**

The whitetops are often included in *Lepidium* (peppergrass; see also this genus); both are weedy genera with some species becoming problematic in irrigated land. Our species can often appear as white clumps across the landscape in late summer, especially in the Arkansas Valley region. All are perennial species with deep roots and blue-green lanceolate leaves with the upper clasping the stem; the flowers are tiny and white (or purplish in *C. latifolia*). Species differences lie primarily in characteristics of the fruits.

*Cardaria chalepensis* (L.) Handel-Mazzetti

Syn. *Lepidium chalepensis*

**Plants** with fruits glabrous or sparingly pubescent; inflorescence much branched, the main axis glabrous. Fruits rounded at the top and bottom and broadest in the middle.

**Habitat:** Fields, agricultural areas, roadsides.

**Notes:** Less common than *C. draba*.

*Cardaria draba* (L.) Desvaux

Syn. *Lepidium draba*

**Plants** with fruits glabrous or sparingly pubescent; inflorescence branched, the main axis pubescent. Fruits somewhat triangular, with a broad base and narrowed apex.

**Habitat:** Fields, agricultural areas, roadsides.

**Notes:** A very abundant species, problematic in the Arkansas Valley.

*Cardaria latifolia* (L.) Spach

Syn. *Lepidium latifolium*

**Plants** often to 3 m, inflorescence branched and often elongated. Flowers purplish; fruits glabrous, triangular ovate.

**Habitat:** Wet areas, along irrigation ditches and small streams.

**Notes:** Abundant adventive species; notably taller and with darker purple flowers than other species.

*Cardaria pubescens* (Meyer) Jarmolenko

Syn. *Lepidium appelianum*

**Plants** to 0.5 m. Flowers white, with fruits densely pubescent.

**Habitat:** Fields, agricultural areas, roadsides.

**Notes:** Differs in having prominent pubescent fruits; somewhat uncommon or at least little documented.

#### ***Chorispora* "purple mustard"**

*Chorispora tenella* (Pallas) DC.

**Plants** annual, stems to 20 cm, somewhat spreading and leafy, branched from the base. Stems and leaves pubescent with gland-tipped hairs. Leaves lanceolate, margins undulate or coarsely dentate. Flowers pale purple to whitish, with narrow lobes. Fruits conspicuously beaked.

**Habitat:** Fields roadsides.

**Notes:** Extremely common adventive species, blooming in the early spring. The median strip and roadsides of I-25 can appear as a purple carpet in some areas when *Chorispora* is in bloom.

#### ***Conringia* "hare's ear mustard"**

*Conringia orientalis* (L.) Dumortier

**Plants** annual, stems to 0.5 m, erect and little branched. Leaves to 10 cm, oval to elliptical, deeply cordate-clasping (heart shaped, clasping the stem). Petals pale yellow, narrow. Fruit elongate, narrow, more or less 4-angled.

**Habitat:** Fields, roadsides, agricultural areas; uncommon (or little collected) adventive species.

**Notes:** Look for the large, rounded, cordate-clasping leaves.

#### ***Descurainia* "flixweed, tansy mustard"**

The tansy mustards are tall, tumbleweed shaped mustards of disturbed areas, especially common along roadsides. They are characterized by divided leaves with stellate and simple pubescence, tiny pale yellow flowers, and elongate rounded fruits. Species can be distinguished by fruit and leaf characteristics.

*Descurainia californica* (Gray) Schulz

**Plants** tall, usually over 1 m, much branched. Leaves simply pinnate. Fruits fusiform, tapering above and below.

**Habitat:** Montane forest openings.

**Notes:** Relatively uncommon, and one of the higher elevation native species.

*Descurainia incana* (Bernhardi) Dorn

Syn. *Descurainia richardsonii*

**Plants** to 1 m, usually branched above. Leaves simply pinnate, with broad segments. Fruits narrowly linear, appressed and crowded on the rachis.

**Habitat:** Montane and subalpine, often in aspen groves.

**Notes:** An uncommon native species, with many varieties described.

*Descurainia incisa* (Engelmamm ex Gray) Britton

**Plants** to 1 m, leaves simply pinnate, with pinnae deeply toothed or incised. Fruits narrowly linear, on spreading pedicels.

**Habitat:** Montane forest openings and roadsides.

**Notes:** A native species; look for the incised lobes on the leaves; species quite variable and often treated as distinct subspecies.

*Descurainia pinnata* (Walter) Britton

Syn. *Descurainia longepedicellata*

**Plants** to about 0.5 m, branched, usually densely pubescent. Leaves pinnate to pinnatifid (divided to the midrib). Fruits somewhat short and plump ("clavate" or club shaped), with style lacking or extremely short.

**Habitat:** Lower elevations, plains to foothills.

**Notes:** Extremely common and variable species, blooming in the early spring.

*Descurainia sophia* (L.) Webb ex Prantl

**Plants** tall, to 70 cm, often branched. Leaves bipinnately compound, finely twice divided with linear segments. Fruits narrowly elongate, spreading.

**Habitat:** Low to middle elevations; roadsides, disturbed areas.

**Notes:** Abundant adventive species; the finely dissected leaves are diagnostic.

#### ***Draba* "whitlow wort"**

*Drabas*, small, inconspicuous and sometimes difficult to identify to species, are a common component of our alpine flora, with a few species occurring at low to middle elevations. They are an undercollected part of the Colorado flora, and there may be more species represented in our region, especially on Pikes Peak, than noted here. *Draba* species are typically small plants with a basal rosette of leaves. The species are distinguished by a few characters: look for fruit characteristics, the presence or absence of stem leaves, and flower color. Unfortunately, sometimes it is necessary to have both flowers and fruits for positive identification and these may not be easy to find. Hairs, especially stellate (star shaped) ones require a lens.

#### **HIGH ELEVATION (MONTANE TO ALPINE) SPECIES**

*Draba albertina* Greene

**Plants** with yellow flowers, petals 2-3 mm; stem leaves present. Fruit linear, glabrous.

**Habitat:** Moist habitats, montane through alpine.

**Notes:** One of our most common species in the mountains; a small and delicate species in all respects.

*Draba aurea* M. Vahl ex Hornemann

**Plants** with yellow flowers, petals 4-6 mm long; stem leaves present. Lower leaf surface with branched or stellate hairs; fruits narrow, pubescent.

**Habitat:** Widespread in the subalpine and alpine zones.

**Notes:** Differs from *D. albertina* having larger flowers and fruits.

*Draba crassifolia* Graham

**Plants** with yellow flowers, petals 1-3 mm. Leaves thick, somewhat succulent; mature fruits over 5 mm long and 2 mm wide.

**Habitat:** Rocky areas, alpine and subalpine.

**Notes:** Found on the Pikes Peak massif; an easily identifiable species with its thick leaves and large fruits.

*Draba exungiculata* (Schulz) Hitchcock

**Plants** with yellow flowers, petals lacking a "clawed" base and extending more or less to the sepals; fruits glabrous, somewhat elongated.

**Habitat:** Rocky areas, Pikes Peak.

**Notes:** Known only from an historical record; generally rare or under collected in Colorado.

*Draba fladnizensis* Wulfen

**Plants** with white flowers, stem leaves few to lacking. Basal leaves ciliate on the margins. Fruits glabrous.

**Habitat:** Rocky areas, Pikes Peak.

**Notes:** Known only from an historical record. A very delicate plant, easily overlooked.

*Draba nemorosa* L.

**Plants** with yellow flowers, stem leaves present. Inflorescence glabrous, fruits (at least lower ones) on long pedicels, elliptical to oblanceolate with blunt apex.

**Habitat:** Occasional on the plains (Black Forest area) but more commonly in foothills montane zone.

**Notes:** Adventive species, relatively more robust than other *Drabas*.

See also *D. streptocarpa* under lower elevations species.



**LOWER ELEVATION SPECIES (PLAINS TO MONTANE)**

See also *D. nemorosa* under higher elevation species.

*Draba cuneifolia* Nuttall

**Plants** with white flowers, stem leaves usually present, fruits crowded in umbellate clusters. Fruits broad, over 2 mm wide. Leaves 1-5 cm long, with simple hairs, ovate to oblanceolate, margins dentate.

**Habitat:** Piñon-juniper communities, grasslands.

**Notes:** Present in the southern portion of our region. Look for the habitat and toothed, wedge-shaped leaves.

*Draba rectifruca* Hitchcock

**Plants** with flowers yellow; inflorescence pubescent with branched hairs. Fruits narrowly oblong with simple hairs.

**Habitat:** South Park, possibly present in Teller Co.

**Notes:** Not yet collected in our region.

*Draba reptans* (Lamarck) Fernald

**Plants** with white flowers, fruits crowded in umbellate racemes. Fruits less than 2 mm wide. Leaves with entire (not toothed) margins.

**Habitat:** Piñon-juniper communities, grasslands.

**Notes:** Similar to *D. cuneifolia* but with smaller leaves and entire (not toothed) margins.

*Draba streptocarpa* A. Gray

**Plants** with yellow flowers, fruits not crowded in clusters. Plants conspicuously pubescent with simple or forked hairs. Fruits prominently twisted.

**Habitat:** Foothills through montane to lower subalpine.

**Notes:** A very common species with distinctively twisted fruits.

***Erysimum "wallflower"***

The wallflowers are one of our most common and often noticed wildflowers, though they rarely form large colonies. In the native species, the broad yellow, orange, or purple flowers are eye catching. The hairs on these species are unique: they appear as short, straight pointed lines when looking down on them through a microscope or lens, but they actually have a short stalk below the visible top portion.

*Erysimum asperum* (Nuttall) de Candolle

**Plants** to 30 cm tall; flowers yellow, petals 10-20 mm long. Fruits and pedicels densely gray pubescent and spreading stiffly at wide angles to the stem.

**Habitat:** Grasslands, foothills.

**Notes:** Common, blooming early in the spring, possibly hybridizing in some locations with *E. capitatum*.

*Erysimum capitatum* (Douglas) Greene

**Plants** to 30 cm tall; flowers yellow to orange at lower elevations, and purple in alpine races. Petals 10-20 mm long. Fruits and pedicels glabrous, ascending parallel to the stem.

**Habitat:** Foothills, montane to alpine meadows.

**Notes:** A variable species in color, with the orange color the most common in the montane zone and purple in the alpine.

*Erysimum cheiranthoides* L.

**Plants** annual, to 30 cm tall. Flowers yellow to somewhat orange, petals less than 5 mm long. Fruits ascending on slender pedicels.

**Habitat:** Roadsides; adventive species used in "wildflower" mixes and often escaping.

**Notes:** Not abundantly naturalized in our region; look for the smaller flowers and roadside habitat.

*Erysimum repandum* L.

**Plants** annual, low and widely branching. Flowers yellow, petals less than 10 mm long. Leaves with sinuate (wavy) margins; fruits widely spreading.

**Habitat:** Fields, agricultural areas.

**Notes:** Adventive species, somewhat uncommon or under-documented here.

### *Hesperis* "dame's rocket"

*Hesperis matronalis* L.

**Plants** tall, sometimes over 1 m. Leaves lanceolate, with serrate margins. Flowers red purple, conspicuous, with petals to 1 cm long.

**Habitat:** Moist areas, often in roadside ditches and swales; plains and lowlands or around towns and often growing in large purple patches.

**Notes:** Naturalized and often aggressive in our area, invading wetland swales. Frequently used as a "wildflower" mix component and not apparently an aggressive colonizer in the East but it is rapidly becoming a problem here in Colorado where should be avoided as a garden plant.

### *Isatis* "dyers woad"

*Isatis tinctoria* L.

**Plants** to ca. 0.5 m, annual to biennial, sometimes perennial. Basal leaves in a rosette, 10-18 cm, entire to slightly toothed on the margin. Flowers yellow, petals to ca. 4 mm, inflorescence dense, widely branched. Siliques dangling on recurved (bent back) stalks, in an elongated teardrop shape, purple brown in age.

**Habitat:** Disturbed grassland, northern El Paso Co.

**Notes:** This is an aggressive noxious weed. Look for the spreading inflorescence and distinctive fruits.

### *Lepidium* "peppergrass" See also *Cardaria*

*Lepidium* closely resembles *Cardaria*, except that the fruits are more inflated and spherical. This can be a confusing distinction and some species in *Cardaria* are sometimes treated under *Lepidium*. The matter of the correct nomenclature and all of the distinctions have yet to be resolved. For now, it is best to examine the species descriptions under both genera when dealing with weedy mustards with small numerous white flowers in a prominent inflorescence. In our species, only *L. perfoliatum* has yellow flowers. Pinnatifid leaves (divided to the midrib) are common in *Lepidium*.

*Lepidium alyssoides* A. Gray

Syn. *Lepidium montanum* ssp. *alyssoides*

**Plants** perennial, stems several, often branched, to about 0.5 m. Basal leaves usually lobed to pinnatifid (sometimes entire), stem leaves reduced, not clasping. Style over 1 mm long.

**Habitat:** Dry areas, plains to foothills and lower montane.

**Notes:** Adventive species. *Lepidium montanum* is included here as part of this variable species complex.

*Lepidium campestre* L.

Syn. *Neolepia campestris*

**Plants** annual, stems often branched, to 0.5 m. Basal leaves pinnatifid, lobed to entire, stem leaves denticulate, sagittate-clasping. Fruits slightly winged.

**Habitat:** Dry areas, fields, and agricultural areas on the plains.

**Notes:** Adventive species. Look for the clasping stem leaves.

*Lepidium densiflorum* Schrader

**Plants** annual, stems to 0.5 m. Basal leaves coarsely toothed to pinnatifid, stem leaves not clasping. Flowers very small, petals often shorter than sepals or entirely lacking. Style not as long as in *L. alyssoides*.

**Habitat:** Plains, grasslands, roadsides.

**Notes:** Very common adventive species, especially visible in the early spring. Distinguished from *L. ramossissimum* by its more spherical fruits and symmetrical growth habit.

*Lepidium perfoliatum* L.

**Plants** annual, to 40 cm. Basal leaves pinnatifid, stem leaves cordate and prominently surrounding the stem. Flowers whitish to yellow.

**Habitat:** Fields, agricultural areas.

**Notes:** A distinctive adventive species, with the round clasping stem leaves and yellow flowers.

*Lepidium ramosissimum* A. Nelson

**Plants** biennial, profusely branched, to 0.5 m. Basal leaves pinnatifid, stem leaves not clasping the stem. Flowers very small, petals often shorter than the sepals or lacking.

**Habitat:** Roadsides, foothills, montane zone.

**Notes:** Similar to *L. densiflorum* but differing in having more elliptical fruits and an asymmetrical growth habit.

*Lepidium virginicum* L.

**Plants** annual, to about 0.5 m, branched above. Basal leaves pinnatifid to irregularly toothed, stem leaves entire and not clasping the stem. Petals to 3 times the length of the sepals. Fruits with relatively short style.

**Habitat:** Foothills, disturbed areas

**Notes:** Apparently an uncommon adventive species or little documented. The flowers are relatively large and conspicuous compared to other species of *Lepidium*.

***Lesquerella* "bladderpod"; See also *Physaria***

The genus *Lesquerella* with its hairy grey-green leaves and yellow flowers is an early spring wildflower of rocky barren slopes. The species are superficially similar, but differences in hairs, fruits, and growth habit distinguish them. Identification does require a good hand lens or microscope for a few species. Some botanists now place *Lesquerella* into a more inclusive concept of *Physaria*, but in eastern Colorado the genera are very distinct and they are separated in this treatment. See *Physaria*.

*Lesquerella calcicola* Rollins

Syn. *Physaria calcicola*

**Plants** growing as small cushions, leaves linear to narrowly oblanceolate. Stems relatively short, only slightly longer than the leaves. Fruits pubescent.

**Habitat:** Limestone outcrops and chalk barrens, endemic to the Arkansas River Valley, especially between Cañon City and Pueblo; also found uncommonly in El Paso Co. on outcrops of the Niobrara Formation.

**Notes:** Look for the short stems, pubescent fruits, and narrow leaves. Generally blooming in early June.

*Lesquerella fendleri* (Gray) Watson

Syn. *Physaria fendleri*

**Plants** growing as small cushions, leaves narrowly lanceolate. Stems relatively short, about twice the length of the leaves. Fruits glabrous.

**Habitat:** Barrens, limestone outcrops, Pueblo and Fremont Counties.

**Notes:** Look for the lanceolate leaves and glabrous fruits; otherwise somewhat similar to *L. calcicola* but more common and more broadly distributed than that species.

*Lesquerella ludoviciana* (Nuttall) S. Watson

Syn. *Physaria ludoviciana*

**Plants** growing initially as single rosettes but often enlarging in age to broad cushions. Leaves narrowly lanceolate. Stems exceeding the leaves by several times their length. Fruits pubescent, often hanging.

**Habitat:** Plains and lower foothills; calcareous gravelly soils along roadcuts and on limestone outcrops.

**Notes:** A common, somewhat weedy species that thrives on disturbance and can be very dominant on certain roadcuts. Look for the relatively long leaves (short in *L. fendleri* and *L. calcicola*) and the pendant fruits.

*Lesquerella montana* (Gray) Watts

Syn. *Physaria montana*

**Plants** growing as single rosettes, often with an "octopus" look to the sprawling stems. Stems much exceeding the leaves, fruits pubescent, secund (on one side of the stem). Leaves rhombic to elliptical.

**Habitat:** Plains grasslands, foothills, montane zone, on open gravelly soils; typically on acidic rather than calcareous bedrock.

**Notes:** Extremely common, blooming in early spring. Look for the second (on 1 side of the stem) fruits and rhombic (diamond shaped) to elliptical leaves.

*Lesquerella ovalifolia* Rydberg

Syn. *Physaria ovalifolia*

**Plants** growing as single rosettes, stems erect, much exceeding the leaves. Fruits glabrous. Leaves ovate.

**Habitat:** Limestone and chalk barrens, Arkansas Valley.

**Notes:** A relatively common species around Pueblo and Cañon City; look for the distinctive round leaves and glabrous fruits.

***Nasturtium* "watercress"**

*Nasturtium officinale* R. Brown

**Plants** perennial, stems creeping or sometimes floating; rooting at the nodes. Leaves glabrous and somewhat succulent, pinnately divided into ovate segments. Flowers white; fruits spreading or curved upwards, usually about 2 cm long.

**Habitat:** Very wet areas, along streams, in irrigation ditches, and around springs.

**Notes:** A common and somewhat weedy species. Look for the sprawling stems and pinnate leaves with ovate segments.

***Noccaea* "wild candytuft"**

*Noccaea montana* (L.) F. K. Meyer

Syn. *Thlaspi montan*; *Noccaea fendleri*

**Plants** to about 15 cm tall, in small clumps. Stems leafy, stem leaves clasping; basal leaves petiolate, spatulate. Flowers white; fruits erect, somewhat cordate.

**Habitat:** Lowlands to alpine tundra, open slopes and gravelly banks.

**Notes:** An extremely common species throughout the region with a broad altitudinal range. Preferring open areas and often abundant in frost disturbed soil on the tundra.

***Pennellia* "mountain mock thelypody"**

*Pennellia micrantha* (Gray) Nieuwland

Syn. *Thelypodium micrantha*

**Plants** perennial, stems single or several from base, to 1 m. Leaves narrowly lanceolate, to 7 cm long. Flowers white, to several mm long; fruits distinctively pendant, to 2.5 cm.

**Habitat:** Gravelly or sandy soils, know from historical records on Pikes Peak.

**Notes:** This species has not been collected in our region for many decades. It resembles an *Arabis* with narrow fruits; the fruits are erect in *Arabis* (*Boechera*) and hang downward in *Pennellia*.

***Physaria* "bladderpod" See also *Lesquerella***

*Physaria* closely resembles *Lesquerella*, but differs in having a double ovary sac (at least in our species), that becomes the distinctive inflated double-sac fruit. This aspect can be seen even in the ovary, so look for the twin sacs even before the ovary becomes mature.

*Physaria floribunda* Rydberg

**Plants** small tap-rooted perennials. Leaves lanceolate to ovate, gray-green with stellate pubescence.

Flowers lemon yellow, fruiting pedicels arched downward and fruits pendant(hanging downward).

**Habitat:** Gravelly slopes, foothills to montane.

**Notes:** Similar to *P. vitulifera* but with somewhat different leaf shape and pendant fruits.

*Physaria vitulifera* Rydberg

**Plants** small, tap-rooted perennials. Leaves ovate to fiddle-shaped, gray-green with stellate pubescence.

Flowers lemon yellow; fruiting pedicels ascending, straight, or sigmoid.

**Habitat:** Gravelly slopes, often along roadsides and in slide areas, foothills.

**Notes:** Common on the lower slopes of Cheyenne Mountain and along the Pikes Peak Highway in El Paso County. Look for the ascending fruits and the fiddle-shaped leaves.

***Rorippa* "yellowcress"**

*Rorippa curvipes* Greene

**Plants** annual, with a short taproot. Stems erect. Leaves sinuate to pinnatifid. Fruits glabrous, over 4 mm long, ovate.

**Habitat:** Pondshores, lower elevations through montane to subalpine.

**Notes:** Common. Look for the erect stems and elongated, hairless fruits.

*Rorippa palustris* (L.) Besser

**Plants** annual, low and usually with decumbent stems. Leaves sinuate (with wavy margins) to pinnatifid (divided to the midrib). Fruits glabrous, over 4 mm long. Flowers with short petals, usually less than 4 mm.

**Habitat:** Muddy pondshores, plains to montane.

**Notes:** Common. Look for the very short petals.

*Rorippa sinuata* (Nuttall) Hitchcock

**Plants** perennial, rhizomatous. Pedicels mostly recurved, fruits oblong to linear.

**Habitat:** Wet meadows, ponds, playas, and roadside drainage areas, plains to lower montane.

**Notes:** Look for the perennial habit, and a tendency to grow in clumps.

*Rorippa sphaerocarpa* (A. Gray) Britton

**Plants** annual, low and spreading. Fruits a round, almost spherical silique.

**Habitat:** Moist areas, plains to montane.

**Notes:** Look for the short round fruits.

*Rorippa teres* (Michaux) Stuckey

**Plants** annual, low and spreading. Fruits elongate. Leaves with vesicular trichomes, blister-like hairs that leave indentations appearing as holes in the leaves and stem.

**Habitat:** Wet, muddy areas, plains to middle elevations.

**Notes:** Look for the characteristic hairs (also shared by *R. sphaerocarpa*). The presence of *R. teres* in our area is debated.

#### ***Schoenocrambe* "skeleton mustard"**

*Schoenocrambe linearifolia* (A. Gray) Rollins

Syn. *Hesperidianthus linearifolius*

**Plants** perennial, to about 1 m. Lower leaves oblanceolate to spatulate, stem leaves inconspicuous, linear. Flowers purple, petals to about 1.5 cm long. Fruit long and linear, erect, not constricted.

**Habitat:** Dry areas, Arkansas River Valley region, often in piñon-juniper communities.

**Notes:** Especially common around Cañon City and Penrose.

#### ***Sinapis* "charlock" See also *Brassica***

This common weedy species is sometimes placed in *Brassica*. It differs in some fruit characters, including having multiple veins ("nerves") on the fruit walls.

*Sinapis arvensis* L.

Syn. *Brassica klaber*; *Brassica arvensis*

**Plants** annual, stems erect, to ca 1 m, often branched above. Leaves deeply lobed below, to irregularly toothed above, bases not clasping. Flowers bright yellow, to 2 cm broad. Siliques glabrous, to 1 cm long, tipped with a broad beak. Silique walls with 3-5 prominent veins.

**Habitat:** Agricultural areas.

**Notes:** Adventive, similar to *Brassica* but differing in having prominent veins on the fruits.

#### ***Sisymbrium* "Jim Hill mustard"**

These tall, weedy "tumbleweeds" with small pale yellow flowers are abundant along roadsides and in floodplains. They bloom throughout the summer and into the early fall.

*Sisymbrium altissimum* L.

**Plants** annual, stems to 1.5 m, usually much branched above. Lower leaves large, deeply lobed, upper leaves small and narrowly lobed to entire. Flowers pale yellow, ca. 5 mm in diam. Siliques numerous, widely spreading, narrowly linear, to 2 cm long.

**Habitat:** Roadsides, disturbed areas, plains to montane.

**Notes:** Adventive, common weed throughout the lower elevations. The pale yellow flowers and spreading fruits distinguish this species from the following.

*Sisymbrium loeselii* L.

**Plants** annual, stems to 1 m, branched above. Lower leaves large, deeply lobed, upper leaves narrow, lobed to entire. Flowers bright yellow, ca. 5 mm in diam. Siliques numerous, erect to ascending, linear, to 2 cm long.

**Habitat:** Roadsides, disturbed areas, foothills to montane.

**Notes:** Adventive, apparently less common than *S. altissimum* or at least less often collected.

#### ***Stanleya* "prince's plume"**

*Stanleya pinnata* (Pursh) Britton

**Plants** to 80 cm or more, robust and somewhat suffrutescent. Leaves petiolate, lower ones pinnatifid, upper leaves entire to divided. Inflorescences long and showy plumes of bright yellow flowers. Fruits on long stipes to 8 cm long.

**Habitat:** Dry rocky and clay rich, alkaline soils on the plains and occasionally in the lower foothills

Known from the Garden of the Gods in Colorado Springs where the Pierre Shale outcrops.

**Notes:** *Stanleya* is regarded as an indicator of selenium in the soil and toxic to livestock. It is a prominent and very showy part of southwestern landscapes.

#### ***Thelypodium***

*Thelypodium* species somewhat resemble *Schoenocrambe* in that they have purple flowers; the leaves are broader, however, and the fruits noticeably constricted between the seeds ("torulose").

*Thelypodium integrifolium* (Nuttall) Endlicher

**Plants** biennial often over 1 m, stems typically branched above. Lower leaves oblanceolate, entire, withering early; stem leaves linear to linear lanceolate, sessile, not clasping the stem or only slightly auriculate. Flowers purple, ca 1 cm in diam. Fruits torulose, erect-ascending.

**Habitat:** Plains, Chico Basin; south El Paso and north Pueblo County, dry sandy soil.

**Notes:** Distribution unknown; relatively common in Larimer County but uncommon or under-documented here. Differs from the more common *T. wrightii* in having sessile stem leaves and more erect fruits.

*Thelypodium wrightii* A. Gray

**Plants** biennial, to 1 m, often branched above. Lower leaves oblanceolate, withering early, stem leaves petiolate. Flowers purple, ca 1 cm in diam. Fruits torulose, broadly spreading.

**Habitat:** Plains, grasslands, Arkansas Valley and eastern plains, in dry sandy or gravelly soil.

**Notes:** More broadly distributed in our region than *T. integrifolium*; common in Pueblo and Fremont Counties.

#### ***Thlaspi* "pennycress"**

*Thlaspi arvense* L.

**Plants** annual, stems solitary or bunched, to 40 cm but usually less. Leaves alternate, lanceolate, and often auriculate at the base; lower leaves withering early. Flowers white, petals very short, to 3 mm. Fruits a round, broadly winged ovate silicle, deeply notched at the apex.

**Habitat:** Disturbed areas, often particularly abundant in moist sites along roads or around ponds, low to high elevations.

**Notes:** An extremely common adventive weed, and quite variable looking when young. The distinctive fruits are an easy identification, but plants can look quite different when young and not in fruiting state. Look then for the small white petals and clasping leaves.

***Turritis:* See *Arabis glabra***

## Cactaceae: Cactus Family

The unmistakable cactus family—succulent, spiny, photosynthetic stems and fragile, showy flowers—is more diverse throughout our region than many realize. Our greatest species diversity is on the plains and to the south of Colorado Springs, but even the montane zone contains a few representatives. The term "areole" refers to the clump of spines; "tubercles" are the swollen projections that occur on stems of some genera.

### Key to the Genera

1. Areoles with glochids (minute barbed bristles that are very hard to get out of your fingers!), stems with separate pads.....2
1. Areoles and stems not as above, appearing small balls or cylinders.....3
2. Joints of stem cylindrical, plants erect shrubs to 2 m tall.....*Cylindropuntia*
2. Joints of stem flat pads, plants low, sprawling.....*Opuntia*
3. Stems ribbed, flowers born below the apex, spines in rows.....*Echinocereus*
3. Stems not ribbed but tuberculate, flowers born at the apex.....4
4. Plants with tubercles lacking grooves on the top surface (look closely, with a lens).....*Pediocactus*
4. Plants with tubercles having deep grooves on the top surface.....*Coryphantha*

### *Coryphantha* "nipple cactus"

*Coryphantha missouriensis* (Sweet) Britton & Rose

Syn. *Escobaria missouriensis*

**Plants** with greenish yellow flowers, central spines on the areoles usually absent. Fruit red.

**Habitat:** Plains grasslands.

**Notes:** Uncommon, look for the red fruit if the flowers are not present.

*Coryphantha vivipara* (Nuttall) Britton & Rose

Syn. *Escobaria vivipara*

**Plants** with pink flowers, central spines usually present on the areoles. Fruit green or yellow.

**Habitat:** Plains, grasslands, occasionally in the lower foothills.

**Notes:** Our common species in the genus. Watch out for confusion with *Pediocactus*, which also has pink flowers. Look for the deep grooves in *Coryphanthus* tubercles that distinguish this genus.

### *Cylindropuntia* "cholla, candelabra cactus"

Many include this species in *Opuntia*, but it differs in very obvious ways from the other prickly pears that have flat pads. This tall candelabra shape creates a beautiful silhouette on our plains landscape from Fort Carson through the southern portion of our region.

*Cylindropuntia imbricata* (Hayworth) Knuth

Syn. *Opuntia imbricata*

**Stems** tall, woody, to 2 m. Flowers bright red pink.

**Habitat:** Plains, juniper woodlands, southern El Paso County to the south.

**Notes:** An unmistakable plant; look for the flowers in June to early July.

### *Echinocereus* "hedgehog cactus"

This genus can be easily identified here by the longitudinal ribs on the plant body with nodes of spines.

*Echinocereus reichenbachii* (Terscheck) Haage var *perbellus* (Britton & Rose) L. Benson

**Plants** with pink flowers, barrel narrowly cylindrical.

**Habitat:** Limestone breaks and outcrops.

**Notes:** Rare or uncommon here, known thus far only from Pueblo County, although relatively common in Las Animas County. Look for the narrow barrel shape if the flowers are not present.

*Echinocereus triglochidiatus* Engelmann

**Plants** with scarlet or deep red flowers, plants often forming huge tussocks.

**Habitat:** Rocky cliff sides and slopes.

**Notes:** A beautiful and intimidating species, too often collected by wishful gardeners. The size is unmatched by any other cactus in our region. Look for the red flowers that give it the name "claret cup".

*Echinocereus viridiflorus* Engelmann

**Plants** with greenish yellow flowers, frequent side shoots.

**Habitat:** Extremely common in the grasslands and on the mesas, as well as rocky outcrops in the Black Forest and lower foothills.

**Notes:** Our most common cactus. Look for the side shoots that give this the name of "hen and chickens"

***Opuntia* "prickly pear"**

The genus is unmistakable with its broad flat pads. The species are somewhat harder, but look closely at the pad covering and the habitat details. Many species have multiple pastel flower colors present—this is not a diagnostic character to species, but an interesting and beautiful array of blossoms that occur in several of our representatives, especially *O. polyacantha* and *O. macrorhiza*.

*Opuntia fragilis* (Nuttall) Haworth

**Plants** with pads very fragile, easily coming apart and somewhat rounded in shape.

**Habitat:** Pine forests and open grasslands near forest edges.

**Notes:** Look for the breakable stems and painfully clinging spines. This is a typical species for the Black Forest and lower foothills.

*Opuntia macrorhiza* Engelmann

**Plants** having pads with relatively few spines and with transverse wrinkles. Flowers typically yellow but sometimes somewhat orange as well.

**Habitat:** Mesas, grasslands, and occasionally lower foothills.

**Notes:** Look for the wrinkled pads and few spines. Fruits edible, but watch out for the tiny glochids. This species can occur with *O. phaeacantha* on the mesas.

*Opuntia phaeacantha* Engelmann

**Plants** with large, broad pads and long spines with brown tips.

**Habitat:** Piñon-juniper grasslands and rocky areas, especially in Fremont and Pueblo Counties.

**Notes:** The common prickly pear cactus for the southern part of our region.

*Opuntia polyacantha* Haworth

**Plants** with relatively small, very spiny pads. Flowers appearing in an array of color, from yellow to copper orange. A variable species, with at least 1 distinct type from our region and see Colorado: var. *trichophora* has long, filiform and flexible shaggy spines. This form is usually found on cliff faces.

**Habitat:** Mesas, plains grasslands. Can occur with *O. macrorhiza* on the mesas.

**Notes:** Common species, blooming in late June or July. Look for the color array and spiny pads.

***Pediocactus* "ball cactus"**

*Pediocactus simpsonii* (Engelmann) Britton & Rose

**Plants** small balls, somewhat elongated with water and when in bloom. Flowers bright pink.

**Habitat:** Plains, grasslands, foothills to montane.

**Notes:** Look at the tubercles to distinguish this from *Coryphantha*: tubercles lack grooves in *Pediocactus*. The bright pink flowers are quite noticeable in early June but do not last long and close at night.

**Callitrichaceae: Water Starwort Family**

This family is composed entirely of small, delicate, aquatic herbs with slender stems and opposite leaves where the tiny flowers occur in the leaf axils. Our species are not well surveyed, so the descriptions here are tentative with respect to distribution and abundance. The family is now sometimes placed into the Plantaginaceae.



*Callitriche hermaphroditica* L.

**Plants** with leaves all linear, submerged, with clasping bases that lack wings.

**Habitat:** Ponds and pond shores, plains to montane.

**Notes:** Generally recognized by the linear leaves. This species is relatively common in our area.

*Callitriche heterophylla* Pursh emend. Darby

**Plants** with leaves that are of two shapes: linear and oblong; petioles connected across the stem by a membraneous wing. Fruit thickest just below the middle, generally round.

**Habitat:** Ponds of the foothills and montane.

**Notes:** Relatively uncommon or little collected. The fruit is necessary for positive identification. Dimorphic leaves (also seen in *C. verna*) are also helpful.

*Callitriche verna* L.

Syn. *Callitriche palustris*

**Plants** with two leaf shapes: leaves linear and oblong, petioles connected across the stem by a membranous wing. Fruit thickest just above the base, obovoid to oblong.

**Habitat:** Ponds of the plains, foothills, and montane.

**Notes:** Our most common species. Look at the fruits and the leaf shapes.

**Campanulaceae: Bellflower Family**

This family is easily recognized by its flagship genus, *Campanula*, our most abundant representative with bell-shaped, blue flowers called harebells. *Triodanis* and *Lobelia* are much less common in our region, requiring wetlands or abundant water.

*Key to the Genera*

- 1. Flowers tubular, bilaterally symmetrical, plants of moist sites.....*Lobelia*
- 1. Flowers not as above, plants of dry or moist sites.....2
- 2. Flowers campanulate (bell-shaped).....*Campanula*
- 2. Flowers flat open (rotate), in the leaf axils.....*Triodanis*

***Campanula* "harebell"**

*Campanula parryi* A. Gray

**Plants** with deep purple corolla lobed halfway to base, lobes spreading; base of lower leaves ciliate with marginal hairs.

**Habitat:** Moist montane meadows, Black Forest, Teller and Fremont Counties.

**Notes:** A species of the middle elevations and moist sites; look for the broad shallow corolla.

*Campanula rapunculoides* L.

**Plants** with deep purple flowers in a tall raceme; leaves coarsely toothed (serrate).

**Habitat:** Adventive rhizomatous species from gardens, often naturalized.

**Notes:** A difficult garden weed. The tall flowering stalks and leaf shape are diagnostic.

*Campanula rotundifolia* L.

**Plants** with pale purple flowers, corolla lobed only to about 1/3 its length, base of lower leaves not ciliate, lacking marginal hairs.

**Habitat:** Dry meadows, trailsides, from the foothills to the tundra.

**Notes:** Our most common species, occurring in many habitats and throughout our foothills and mountains. The name "rotundifolia" comes from the basal leaves that wither early and are easy to miss.

*Campanula uniflora* L.

**Plants** usually less than 10 cm tall, flowers narrowly campanulate, with deep lobes.

**Habitat:** Alpine tundra, Pikes Peak.

**Notes:** Not uncommon, but inconspicuous and much smaller and more delicate than other species of *Campanula*.

***Lobelia* "lobelia"**

This genus is somewhat similar in appearance to *Penstemon* (Scrophulariaceae/Plantaginaceae) with a bilaterally symmetrical corolla. However, both our species occur in wetlands, while penstemons are typically found in dry areas. *Lobelia* also has an inferior ovary, whereas penstemon has a superior ovary.

*Lobelia cardinalis* L.

**Plants** with flowers bright red in a spikelike raceme; stems erect, to 100 cm. Corollas bilaterally symmetrical, with short lips.

**Habitat:** Rare in our region, thus far only known from wetlands of Pueblo Co. in the Chico Basin area.

**Notes:** A striking plant with the scarlet corollas.

*Lobelia siphilitica* L.

**Plants** with flowers purple to blue-ish, often striped with white, in a spikelike raceme. Stems to 100 cm. Corollas bilaterally symmetrical, resembling *Penstemon*.

**Habitat:** Moist prairie swales, seeps, and streambanks; uncommon to rare here.

**Notes:** Known from a few localized plains wetlands, from the Air Force Academy south to Chico Basin in Pueblo County.

***Triodanis* "Venus' looking glass"**

*Triodanis perfoliata* (L.) Nieuwland

**Plants** annual, with broadly ovate, clasping (perfoliate) leaves. Flowers bluish, deeply lobed to rotate, sometimes cleistogamous (not opening, self fertilizing); stems angled, from decurrent leaf bases, to 50 cm.

**Habitat:** Wet areas, uncommon or undercollected.

**Notes:** The clasping leaves that surround the stem are diagnostic for this species. Thus known only from Cheyenne Mountain and the lower foothills, but probably occurring elsewhere along the mountain front in our region.

**Cannabaceae: Hops Family**

This family is sometimes included in the Moraceae, the mulberry family, but differs in having 4 parted flowers and a herbaceous habit. The woody shrub *Celtis* (hackberry) is sometimes now also placed in the Cannabaceae, but it is treated here in its traditional placement in the Ulmaceae (elm family).

*Key to the Genera*

- 1. Plants erect, not vines. Leaves compound.....*Cannabis*
- 1. Plants vines, leaves palmately lobed but not compound.....*Humulus*

***Cannabis* "marijuana"**

*Cannabis sativa* L.

**Plants** with palmately compound leaves, and unisexual flowers. Leaflets narrowly serrate on the margins. Stems to 2 m tall.

**Habitat:** Dry areas, roadsides, clandestine gardens.

**Notes:** Adventive, often cultivated and locally can be naturalized. The leaves are very recognizable.

***Humulus* "hops"**

*Humulus lupulus* L.

Syn. *Humulus neomexicanus*

**Plants** twining vines, leaves palmately lobed, stems harshly scabrous (scratchy). Flowers unisexual.

**Habitat:** Canyons, rocky slopes of our foothills throughout the region.

**Notes:** Used for the flavoring of beer; this native species has distinctive bracts surrounding the female flowers.

**Capparaceae: Caper Family**

The caper family can often be mistaken for the Brassicaceae because of its long siliqua-like fruits, but can be distinguished by its long-exserted stamens and the long stipes (pedicels or stalks) on the fruit.

*Key to the Genera*

- 1. Plants not sticky to the touch.....*Cleome*
- 1. Plants sticky to touch.....*Polanisia*

***Cleome* "beeplant"**

*Cleome serrulata* Pursh

**Plants** tall, to 1 m or more; leaves trifoliate, leaflets 5-10 mm wide, petals purple to whitish, 8-12 mm.

**Habitat:** Roadside, sandy areas.

**Notes:** Relatively common. Look for the open flowers, and long stalked fruits that lack stickiness. The common name is accurate for the garden relative of our native species is an excellent bee attractant.

***Polanisia* "clammyweed"**

*Polanisia dodecandra* (L.) de Candolle

**Plants** sticky viscid, to about 1 m, often less; leaves trifoliate, leaflets 2-5 cm long; petals white to purple, 8-10 mm.

**Habitat:** Plains, roadsides, sandy or gravelly areas.

**Notes:** Look for a sticky feel and a strong, somewhat disagreeable odor. Relatively common on the plains.

*Polanisia jamesii* (Torrey & Gray) Iltis

Syn. *Cristatella jamesii*

**Plants** annual, small and somewhat delicate, to about 10 cm. Leaflets linear, 1-5 mm side, entire plant very sticky glandular. Flowers tiny, white to creamy.

**Habitat:** Sandhills on the plains.

**Notes:** Uncommon but probably undercollected. It is very inconspicuous and looks like a small tuft of succulent, sticky, yellowy-green leaves.

**Caprifoliaceae: Honeysuckle Family**

This family is characterized by having paired flowers and opposite leaves. The true honeysuckles are introduced shrubs here but are commonly naturalized on the mesas and in the lower foothills. Most of our species are distinctly woody, only the diminutive *Linnaea* appears somewhat herbaceous but has semiwoody lower stems. Some botanists now place *Sambucus* and *Viburnum* into the Adoxaceae.

*Key to the Genera*

- 1. Leaves pinnately compound.....*Sambucus*
- 1. Leaves simple.....2
- 2. Plants small, with creeping stems, appearing mostly herbaceous, flowers pink in nodding pairs  
.....*Linnaea*
- 2. Plants larger, clearly shrubby, not as above.....3
- 3. Leaves 3-lobed, somewhat maple-like.....*Viburnum edule*
- 3. Leaves not maple-like.....4
- 4. Flowers yellow, surrounded by a cup of broad bracts, berry black.....*Lonicera involucrata*
- 4. Flowers white or pink, bracts narrow, berries white, pink or red.....5
- 5. Flowers bilaterally symmetrical, berry red, juicy.....*Lonicera*
- 5. Flowers with short triangular lobes, berry bright white, not juicy.....*Symphoricarpos*

***Linnaea* "twinflower"**

*Linnaea borealis* L.

**Plants** mat forming, stems less than 15 cm tall, somewhat inconspicuous. Flowers paired, nodding, campanulate; leaves ovate, evergreen.

**Habitat:** Cool moist, conifer forests, middle elevations.

**Notes:** Relatively uncommon on Pikes Peak, except in the foothills west of the Palmer Divide where there is more moisture, very common elsewhere in Colorado.

#### ***Lonicera* "honeysuckle"**

A mixed group of species, and probably best considered two genera, *Distegia*, or the native bush honeysuckle, and true honeysuckles in the genus *Lonicera* proper. *Lonicera morrowii* and *L. tatarica* are introduced species here, but commonly escaping since the juicy red berries are popular with birds and spread easily.

*Lonicera involucrata* (Richardson) Banks

Syn. *Distegia involucrata*

**Plants** tall shrubs, to 3 m. Flowers in pairs, creamy yellow, surrounded by red bracts. Berries black, shiny. Leaves opposite, ovate to ovate-lanceolate, with pointed tips, somewhat leathery in texture.

**Habitat:** Moist locations, foothills to montane.

**Notes:** Look for the bright red bracts and shiny black (nonedible) berries.

*Lonicera morrowii* A. Gray

**Plants** tall shrubs, to 3 m. Flowers in pairs, white, turning yellowish in age. Leaves ovate, to 3 cm, pubescent beneath. Berries red, juicy.

**Habitat:** Adventive cultivated species, occurring around cities, old homesteads, and throughout the mesas and foothills.

**Notes:** Sometimes hybridizing with *L. tatarica*.

*Lonicera tatarica* L.

**Plants** tall shrubs, to 3 m. Flowers in pairs, pink. Leaves ovate, to 3 cm, glabrous beneath. Berries red, juicy.

**Habitat:** Adventive cultivated species, occurring around urban areas, old homesteads, and throughout the mesas and foothills.

**Notes:** Sometimes hybridizing with *L. morrowii*.

#### ***Sambucus* "elderberry"**

*Sambucus racemosa* L.

Syn. *Sambucus microbotrys*

**Plants** tall shrubs, to 3 m or more. Flowers white, in dense pyramid clusters, becoming orange-red berries. Leaves opposite, pinnately compound, with 5-7 teeth; margins sharply dentate.

**Habitat:** Moist canyons of the foothills to the montane.

**Notes:** Relatively common along streams and seeps.

#### ***Symphoricarpos* "snowberry"**

*Symphoricarpos albus* (L.) S. F. Blake

**Plants** low, slender shrubs typically not forming dense patches, to about 1 m high; leaves ovate, to about 1 cm long, flowers broadly bell-shaped, pink, anthers and style enclosed within the tube, berries white.

**Habitat:** Foothill canyons

**Notes:** Our only snowberry that does not form big patches.

*Symphoricarpos occidentalis* Hooker

**Plants** low shrubs, typically forming broad patches, to about 1 m; flowers broadly bell-shaped, pink, with anthers and style exerted, berries white.

**Habitat:** Plains and mesas.

**Notes:** Our lowest elevation species, usually not found in the foothills.

*Symphoricarpos rotundifolius* A. Gray

**Plants** low shrubs, typically forming broad patches, to about 1 m; flowers narrowly tubular, pink, berries white. Leaves extremely variable in size and shape, with margins entire to quite lobed.

**Habitat:** Canyons, lower foothills.

**Notes:** A mid-elevation, patch-forming species with quite variable leaves. The variation has led to an abundance of early names for multiple species, but it seems best to include them under the broad concept of *S. rotundifolius*. The species seems particularly variable in the steep canyons of southern Fremont County.

***Viburnum* "bush cranberry"**

The common name of bush cranberry refers only to our single native species, the boreal species *Viburnum edule*. The genus also includes a number of cultivated species of *Viburnum*, which occasionally become established. *Viburnum lentana* has densely stellate pubescent leaves, and *V. lentago* has reddish hairs on the leaves that resemble those of the genus *Prunus* in the Rosaceae. Neither is common in our region.

*Viburnum edule* (Michaux) Rafinesque

**Plants** low shrubs, to 2 m. Leaves broad, to 10 cm long, three lobed. Fruits bright red.

**Habitat:** Moist conifer forests of the foothills, often along streams or near seeps.

**Notes:** Relatively uncommon here, except in the Palmer Divide area west of Palmer Lake.

**Caryophyllaceae: Pink Family**

Although this family is sometimes divided into the Caryophyllaceae, with united sepals and clawed petals, and the Alsiniaceae, with separate sepals and nonclawed petals, they are combined here under the more traditional inclusive family concept. The family is easily recognized by the opposite leaves and swollen nodes (look closely in small plants and in cushion forming ones) and the 5-parted flowers with pink or white petals. A lookalike family is the Molluginaceae, with a single uncommon species (*Mollugo verticillata*) blunt whorled leaves, with a large basal whorl and smaller ones above.

*Key to the Genera*

- 1. Sepals united into a tube, petals with a long stalk (claw).....2
- 1. Sepals separate, petals lacking or when present, without a long stalk .....6
  
- 2. Styles 5 (use a lens).....*Melandrium*
- 2. Styles 2 or 3.....3
  
- 3. Styles 3, calyx with 10 "nerves" (vertical veins, showing as lines).....*Silene*
- 3. Styles 2, calyx with 5 "nerves" or angled, or rounded and only faintly nerved.....4
  
- 4. Flowers very tiny, numerous in much branched broad inflorescences.....*Gypsophila*
- 4. Flowers not tiny, over 1 cm long, relatively few.....5
  
- 5. Calyx rounded, flowers white to light pink, plant perennial.....*Saponaria*
- 5. Calyx angled, flowers deep pink, plants annual.....*Vaccaria*
  
- 6. Leaves with minute, colorless stipules at the base.....7
- 6. Leaves lacking stipules.....8
  
- 7. Plants annual, glandular pubescent.....*Spergularia*
- 7. Plants perennial, not glandular pubescent.....*Paronychia*
  
- 8. Plants less than 2 cm high, leaves mostly basal, linear, stems few flowered, high elevations.....9
- 8. Plants not as above.....10
  
- 9. Styles 3 (use a lens).....*Minuartia stricta* (see comments for *Minuartia*)
- 9. Styles 4-5.....*Sagina*
  
- 10. Styles 5, capsule cylindrical, splitting into 10 teeth.....*Cerastium*
- 10. Styles 3, capsule short and ovoid or oblong, splitting into 3 or 6 teeth.....11
  
- 11. Petals deeply 2-lobed, sometimes to the base.....*Stellaria* (including *Pseudostellaria*)
- 11. Petals entire or shallowly notched.....12

12. Leaves elliptical, tips rounded, plants with some leaf pairs on stem.....13  
 12. Leaves linear, basal, stems lacking leaves.....14
13. Stems elongate, sprawling, branched, stem and leaves densely short pubescent.....*Arenaria lanuginosa*  
 13. Stems simple or branched, erect, stem and leaves inconspicuously pubescent.....*Moehringia*
14. Leaves linear or filiform, grasslike and over 3 cm long.....*Arenaria*  
 14. Leaves linear but short and thick, less than 1 cm.....*Minuartia*

**Note:** The genus *Dianthus* (carnation, pink) is often found in seed revegetation mixes and can occur in patches occasionally in our region. *Dianthus* has red pink flowers, relatively short stems, and narrow leaves. Two small bracts occur below the calyx. It does not appear to spread here and may be only a short-term inhabitant of seeded areas.

#### ***Arenaria* "sandwort"**

*Arenaria fendleri* A. Gray

Syn. *Eremogone fendleri*

**Plants** 15-20 cm, leaves mostly basal, over 3 cm long. Flowers white, in an open cyme.

**Habitat:** Dry meadows, mesas through alpine.

**Notes:** An extremely common species, covering a wide elevational span and blooming throughout the growing season. Tundra plants tend to be shorter than those found at lower elevations.

*Arenaria hookeri* Nuttall ex Torrey & Gray

Syn. *Eremogone hookeri*

**Plants** mat forming, stems usually less than 10 cm, leaves sharp pointed in age, flowers white, in dense clusters.

**Habitat:** Barrens, sandy and gravelly areas on the plains, mesas and lower foothills.

**Notes:** Common in Pueblo and Fremont Counties, as well as eastern El Paso County.

*Arenaria lanuginosa* (Michx.)Rohrb.

Syn. *Spergulastrum lanuginosum*

**Plants** with branched and somewhat sprawling stems, leaves elliptical, apices acute; stem and leaves densely pubescent; leaf pairs numerous.

**Habitat:** Montane forests, rocky slopes and open areas.

**Notes:** Known from Fremont County. Often put in the genus *Arenaria*, but has much broader leaves than other members of that group.

#### ***Cerastium* "chickweed, mouse ear"**

*Cerastium arvense* L.

Syn. *Cerastium strictum*

**Plants** perennial, with stems to 20 cm, usually single, containing tufts of sterile shoots in the leaf axils.

Flowers with conspicuous white petals, bracts below inflorescence scarious.

**Habitat:** Mesas and lower foothills to subalpine meadows.

**Notes:** A common species with a broad elevational range; look for the single stems and sterile shoots.

*Cerastium beeringianum* Chamisso & Schlechtendal

**Plants** perennial, somewhat sprawling and loosely matted; flowers with conspicuous white petals, bracts below the inflorescence not scarious (transparent), calyx glandular with long multicellular hairs.

**Habitat:** Tundra, usually in damp areas along rivulets or below snowbeds, or rocky slopes.

**Notes:** An arctic species, always found at high elevation, occurring here only on Pikes Peak.

*Cerastium fontanum* Baumgartner

Syn. *Cerastium vulgatum*

**Plants** perennial, stems single, sprawling and rooting at the nodes; flowers with petals about as long as the sepals.

**Habitat:** Adventive species of gardens, naturalized around towns.

**Notes:** Look for the sprawling habit and nodal stems.

*Cerastium nutans* Rafinesque

Syn. *Cerastium brachypodum*

**Plants** annual, stem single, erect, not sprawling or rooting at the nodes; flowers with petals more or less equal to the sepals.

**Habitat:** Native species, moist areas on mesas and lower foothills, seepage channels.

**Notes:** Often blooms early. Some botanists prefer to call our species *C. brachypodum*, differing from *C. nutans* by minor characteristics of the shorter pedicels bent at the fruit tip.

### *Gypsophila* "baby's breath"

*Gypsophila elegans* Bieberstein

**Plants** annual, low, inflorescence few flowered; flowers with very short petals, about 6 mm.

**Habitat:** Adventive species, naturalized from seed mixes, roadsides, disturbed areas.

**Notes:** Uncommon, but perhaps spreading.

*Gypsophila paniculata* L.

**Plants** tall, ca. 1 m or more, much branched, with many tiny white flowers. Inflorescence branches glabrous (hairless).

**Habitat:** Adventive garden species, naturalized around towns and along roadsides.

**Notes:** Uncommon adventive species.

*Gypsophila scorzonerifolia* Seringe

**Plants** ca 1 m or more, much branched, with many tiny white flowers. Inflorescence branches glandular pubescent.

**Habitat:** Garden species, naturalized around towns, and occurring in the Monument Creek floodplain around Colorado Springs.

**Notes:** Uncommon adventive species, possibly spreading. Look for the glands on the inflorescence.

### *Melandrium* "campion"

Some species are placed in the genus *Gastrolychnis* by European authors; the two are separated on the basis of unisexual (*Melandrium*) flowers vs. perfect ones (*Gastrolychnis*). *Melandrium* can also be treated as part of a broad concept of *Silene*.

*Melandrium apetalum* L.

Syn. *Gastrolychnis apetalum*; *Silene hitchguirei*

**Plants** less than 10 cm, flowers perfect, nodding, with very short petals that are included in or barely longer than the calyx; calyx strongly inflated.

**Habitat:** Alpine tundra, uncommon or overlooked.

**Notes:** A diminutive alpine species, usually occurring singly.

*Melandrium drummondii* Hooker

Syn. *Gastrolychnis drummondii*; *Silene drummondii*

**Plants** with stems to 20 cm or more, flowers perfect, stem with multiple leaf pairs, not reduced in size.

**Habitat:** Dry meadows, foothills to montane.

**Notes:** Very similar to *Silene scouleri*, which fewer leaf pairs that become progressively smaller on the stem.

*Melandrium dioicum* (L.) Cosson & Germain

Syn. *Silene dioeca*

**Plants** with stems to 25 cm, flower unisexual, stems leafy.

**Habitat:** Dry meadows, foothills through montane.

**Notes:** Look for the unisexual flowers, lacking either anthers or a stigma/ovary.

### ***Minuartia* "alpine sandwort"**

*Minuartia obtusiloba* Rydberg

Syn. *Lidia obtusiloba*

**Plants** forming dense mats, basal stems slightly woody, erect stems to 5 cm. Flowers single, white, to about 5 mm in diam., petals slightly lobed at the apex, sepals cucullate (hooded) at the tip.

**Habitat:** Alpine tundra, often in sandy or gravelly areas.

**Notes:** It is sometimes difficult to see the paired leaves in mat-forming genera in this family, but look for the 5-parted flowers; mat or cushion growth forms are common in alpine representatives of this family.

*Minuartia rubella* (Wahlenberg)

Syn. *Tryphane rubella*

**Plants** delicate, tufted, low mats. Inflorescence few flowered cyme; sepals acute, petals slightly shorter, white. Pedicels and calyx glandular.

**Habitat:** Wet gravels, alpine and subalpine.

**Notes:** Check carefully, similar to *Sagina* and to *Spergula*.

Another species of *Minuartia* (also sometimes put in the genus *Alsinanthe*), *M. macrantha*, is common in the Colorado mountains but has not yet been collected on Pikes Peak. Whether this is just an oversight, or whether it truly does not occur here has yet to be answered. *Minuartia macrantha* can be distinguished by its long, broad and conspicuous petals that exceed the sepals, and by the loose matted growth habit. The sepals are acute, not cucullate as in *M. obtusiloba*. It occurs in sandy and gravelly areas on the tundra.

### ***Moehringia***

*Moehringia lateriflora* (L.) Fenzl

Syn. *Arenaria lateriflora*

**Plants** perennial, stems delicate, to 25 cm, erect, but decumbent at the base; stems finely pubescent. Leaves 1-3 cm, oval to elliptical, apex rounded. Inflorescence with 1 to few flowers, white, petals to about 5 mm, sepals distinct.

**Habitat:** Moist shady areas, montane to subalpine.

**Notes:** Sometimes difficult to see if not in bloom. Look for the oval leaves with rounded apices and the decumbent stem base. Similar to *Silene menziesii* but look for the distinct sepals in *Moehringia*.

### ***Paronychia* "nailwort"**

The flowers in this genus are very small and apetalous (they lack petals) and are born in bract-like stipules.

*Paronychia jamesii* Torrey & Gray

**Plants** loosely matted, leaves linear, very sharp pointed, to about 2 cm long, flowering stems to about 3 cm. Inflorescence with numerous flowers, in branched cymes.

**Habitat:** Sandy areas, open gravelly slopes, plains through ponderosa forests of the Black Forest and foothills.

**Notes:** Look for the loose mats, sharp leaves, and erect lower-bearing stems above the mat.

*Paronychia pulvinata* Gray

**Plants** tightly matted, leaves not sharp, somewhat elliptic, flowers born within the mats.

**Habitat:** Alpine tundra, gravelly areas.

**Notes:** A common species at high elevation, often occurring in frost scars with other members of the family.

*Paronychia sessiliflora* Nutt.

**Plants** loosely matted, leaves linear, sharp pointed, to about 5 mm long, flowering stems short, just above the mat, flowers few, appearing yellowish.

**Habitat:** Sandy areas and barrens, plains. Our lowest elevation species.

**Notes:** Differs from *P. jamesii* in having very short stems and fewer flowers. Common in Pueblo and Fremont Counties.



### ***Sagina* "pearlwort"**

*Sagina saginoides* (L.) Karsten

**Plants** forming very small, circular mats with a short taproot. Flowers single, minute, on very short stems. Leaves mostly basal, linear.

**Habitat:** Moist gravelly areas in the subalpine and alpine, often around ponds or along roads.

**Notes:** Easily missed since these are such small plants, but relatively common. Look for the single flowers.

### ***Saponaria* "bouncing bet, soapwort"**

*Saponaria officinalis* L.

**Plants** perennial, from rhizomes, stems to 1 m; leaves ovate to elliptical, to 1 cm or more wide; flowers numerous in a loose apical cluster, pink to white, large, petals to 1 cm long.

**Habitat:** Adventive species, naturalized along roadsides and around towns.

**Notes:** A garden escapee that has become a pest since it is difficult to eradicate and spreads rapidly here. The leaves make a lather when rubbed in water.

### ***Silene* "campion"**

This genus comes in 2 growth forms: the familiar alpine mat form of *S. acaulis*, and the taller, leafy stemmed lower elevation species. Look closely to distinguish the flowers from some species of *Melandrium* (see key), which is sometimes included within a broad concept of *Silene*.

*Silene acaulis* L.

**Plants** perennial, low, tightly and densely matted. Leaves linear, to 2 cm long, sessile (without a petiole), and crowded. Flowers solitary, bright pink.

**Habitat:** Alpine tundra, open or rocky areas.

**Notes:** One of our most familiar tundra plants. Look for pink flowered dense cushions.

*Silene antirrhina* L.

**Plants** annual, with stems to 50 cm or rarely taller, erect, with a distinctive sticky band around the upper internodes (often appearing dark). Leaves linear to lanceolate, to 4 cm or more long, flowers white to slightly pink, usually exceeding the sepals, with petals to 15 mm long. Calyx glabrous.

**Habitat:** Fields, meadows, plains to middle elevations in the foothills.

**Notes:** Look for the annual growth habit, the glabrous calyx, and the sticky band, which gives the common name in Europe of "catchfly".

*Silene csereii* Baumg.

**Plants** biennial, stems to over 50 cm. Leaves spatulate to ovate-lanceolate, lacking hairs. Flowers white, deeply split into two lobes.

**Habitat:** disturbed areas, meadows.

**Notes:** Introduced species, known as an uncommon occurrence in Teller County.

*Silene noctiflora* L.

**Plants** annual, stems to 1 m, relatively stout; typically sticky pubescent above (not in bands). Leaves to 10 cm (usually less) and broadly lanceolate. Flowers white to pinkish, in open cymes, calyx inflated, with green ribs.

**Habitat:** Adventive species, meadows and foothills.

**Notes:** Look for the sticky stem; the inflated calyx resembles those of *Melandrium* (which is never sticky).

*Silene scouleri* Hooker ssp *hallii* (S. Watson) Hitchcock & Maguire

**Plants** perennial, stems to 50 cm, glandular. Leaves narrowly lanceolate, long cuneate to the base. Flowers purplish, in open inflorescence, somewhat nodding, Calyx with distinctive dark, sticky "ribs".

**Habitat:** Meadows, upper elevations.

**Notes:** A native species, somewhat resembling *Melandrium* (but look for the sticky ribs on the calyx).

*Silene vulgaris* (Moench) Garcke

**Plants** perennial, stems to 80 cm, erect. Leaves to 5 cm, sessile, ovate lanceolate, glabrous. Flowers whitish, calyx distinctively reticulate with a netlike appearance of the veins.

**Habitat:** Adventive species, fields, roadsides, throughout the middle elevations.  
**Notes:** Look for the netlike appearance of the veins on the calyx.

***Spergularia* "sand spurry"**

*Spergularia marina* L.

**Plants** annual, stems erect, to 20 cm (usually shorter), branched, leaves somewhat fleshy, round in cross section, with a mucronate apex; flowers white or pinkish, shorter than the sepals, stamens 2-5.

**Habitat:** Muddy areas, often around ponds.

**Notes:** Uncommon in our area. Other species of *Spergularia* occur in Colorado, and may also be in our region though they have not been collected yet: *S. media* is a large robust plant of the plains, and has 6-10 stamens.

*Spergularia rubra* (L.) J. & K. Presley

**Plants** annual, low, delicate, and prostrate. Leaves not rounded but somewhat flattened, often glandular. Flowers pink, with 6-10 stamens.

**Habitat:** Along logging roads, montane and subalpine.

**Notes:** Uncommon in our region.

***Stellaria* "chickweed, starflower"**

The group as a whole is easily recognized by their "star" appearance of delicate, sharp white petals, often deeply divided. The species can be more difficult to distinguish: check habitat carefully! These species can be divided into 2 easily recognized groups: *Pseudostellaria*, which has fleshy tubers and glandular pubescence, and true *Stellaria*, which lacks the glands and has fibrous roots, not tubers.

PLANTS WITH FLESHY TUBERS AND GLANDULAR HAIRS

*Pseudostellaria jamesiana* (Torrey) Weber & Hartman

Syn. *Stellaria jamesiana*

**Plants** with stems from tubers; glandular, with thin, elliptical lanceolate leaves. Flowers white, upper ones infertile.

**Habitat:** Forests, foothills and middle elevations.

**Notes:** An unusual species, distinctly different in many aspects from true *Stellaria* and probably best as a separate genus.

PLANTS WITH FIBROUS ROOTS, LACKING GLANDULAR HAIRS

*Stellaria calycantha* (Ledebour) Bongard

**Plants** with erect stems, leaves usually over 1 cm long, lanceolate to elliptical, stems with multicellular hairs, leaves ciliate; petals almost lacking, very small to absent.

**Habitat:** Wet montane and subalpine meadows, often in willow cars or along streams.

**Notes:** Often hidden among willows and on tussocks; look for the ciliate leaves and hairy stems.

*Stellaria crassifolia* Ehrhart

**Plants** with weak, somewhat sprawling stems; leaves lanceolate, glabrous, lacking cilia on the margins. Flowers few, inflorescence terminal; flowers about as long as the sepals.

**Habitat:** Wet meadows, upper elevations.

**Notes:** Similar to *S. calycantha*, but lacking the cilia on the leaves and having glabrous stems.

*Stellaria longifolia* Mühlenberg ex Willdenow

**Plants** with flowers subtended by bracts; inflorescence appearing lateral with stem continuing above. Leaves lanceolate to linear lanceolate.

**Habitat:** Moist meadows, montane, very common.

**Notes:** Look for the stem continuing beyond the inflorescence, which is subtended by bracts, not leaves.

*Stellaria longipes* Goldie

**Plants** with erect glabrous stems, leaves lanceolate, somewhat thick, flowers usually single and terminal.

**Habitat:** Meadows, subalpine through alpine.

**Notes:** Look for the thick leaves and single terminal flowers.

*Stellaria media* (L.) Vil.

Syn. *Alsine media*

**Plants** annual, stems prostrate to somewhat ascending, less than 10 cm; leaves ovate, to 5 mm, abruptly narrowed to the petiole. Flowers deeply divided, appearing as if they have 10 petals, delicate, almost the same length as the sepals.

**Habitat:** Lawns, gardens, irrigated shrubbery around towns.

**Notes:** A common adventive, but nonproblematic, species. Look for the deeply divided flowers.

*Stellaria umbellata* Turczaninow

**Plants** with stems to 40 cm, slender, usually branched; inflorescences subtended by bracts, flowers with petals lacking, inflorescence umbellate. Plants highly variable.

**Habitat:** Meadows, upper elevations.

**Notes:** An extremely variable plant; look for the bracts subtending the inflorescences, and the apetalous flowers.

### ***Vaccaria* "corn cockle"**

*Vaccaria pyramidata* Medicus

Syn. *Vaccaria hispanica*

**Plants** annual, branched, somewhat glaucous (blue green) in appearance. Leaves lanceolate, to 10 cm., clasping. Flowers bright pink, to 12 cm broad.

**Habitat:** Fields, roadsides. Adventive species, occasionally naturalized from gardens and xeriscape mixes.

**Notes:** A distinctive, somewhat uncommon weed in our area, although a pretty garden species.

### **Ceratophyllaceae: Hornwort Family**

This family is one of several very similar aquatic groups with tiny flowers and divided leaves. *Chara*, an alga, has very rough stems and smells bad. *Ranunculus trichophyllus* has alternate leaves, and larger flowers. In *Ceratophyllum*, look for the dichotomous (2 by 2) branching and the tiny toothed edges of divisions (use a lens).

*Ceratophyllum demersum* L.

**Plants** aquatic, with leaves opposite to almost whorled, branching in a dichotomous fashion. Divisions linear, with segments having minute teeth on the margins, visible with a lens.

**Habitat:** Ponds, lower elevations to montane.

**Notes:** Very similar to a number of other aquatic species. Look closely!

### **Chenopodiaceae: Goosefoot Family**

This family contains the familiar garden beet and spinach, as well as some of our weedy tumbleweeds. The small flowers in clusters are difficult to decipher, but together with the typical geometric shapes of the leaves and mealy appearance ("farina"), the family is easy to recognize, although the genera can be difficult! The two most challenging can be *Atriplex* (herbaceous species) vs. *Chenopodium*, where it is necessary to see if the flowers are perfect (both sexes present in a flower), or imperfect (flowers single sex only). Ripe fruits are often necessary for positive identification to species! Members of the Chenopodiaceae are typically tolerant of (and indicators for) alkaline and salty soils, so flourish in the Arkansas River drainage.

#### *Key to the Genera*

- 1. Plants tall woody shrubs, > 1 m in height.....2
- 1. Plants not tall woody shrubs; if shrubby, less than 1 m in height.....3

- 2. Plants with linear, cylindrical somewhat succulent leaves, spiny.....*Sarcobatus*
- 2. Plants not as above; if spiny, then with leaves flat, not cylindrical or succulent.....*Atriplex*

- 3. Plants low growing to prostrate; stems with succulent, terete, sausage-like leaves bearing a small spine

at tip.....	<i>Halogeton</i>
3. Plants not as above.....	4
4. Leaves linear, becoming very sharp spiny, plants pyramid shaped tumbleweed.....	<i>Salsola</i>
4. Leaves not linear or spiny.....	5
5. Plants prominently pubescent or stellate woolly tomentose.....	6
5. Plants glabrous or farinose with white or yellow meal.....	7
6. Plants low shrubs, woody at the base, white woolly all over, appearing gray-green...	<i>Krascheninnikovia</i>
6. Plants not as above.....	<i>Axyris</i>
7. Leaves pungent, pinnatifid or marginally toothed, glandular.....	<i>Teloxys</i>
7. Leaves not smelly, entire or coarsely lobed, sometimes with farina.....	8
8. Plants strongly pilose with long hairs on leaves and stem, fruiting calyx with a prominent hook...	<i>Bassia</i>
8. Plants only slightly hairy or glabrous, calyx lacking hook.....	9
9. Plants hairy, not farinose, leaves entire, pyramid shaped tumbleweed.....	<i>Kochia</i>
9. Plants not as above.....	10
10. Plants either monoecious or dioecious, female flowers with specialized bracts.....	11
10. Plants with perfect flowers, lacking specialized bracts.....	12
11. Leaves broadly ovate, coarsely toothed, fruit triangular conical, with fused and folded bracts, plants annual, prostrate.....	<i>Suckleya</i>
11. Leaves lanceolate to triangular hastate, fruit not triangular conical.....	<i>Atriplex</i>
12. Leaves sinuate dentate, narrow, dropping early; plant becoming a deep red tumbleweed...	<i>Cycloloma</i>
12. Plants not as above.....	13
13. Leaves linear, lacking farina.....	14
13. Plants leaves wider than linear, or if not so, then farinose.....	15
14. Flowers solitary in the axils of bracts with scarious margins, plants not succulent, tumbleweeds.....	<i>Corispermum</i>
14. Flowers in clusters in leaf axils, plants with succulent leaves, prostrate.....	<i>Suaeda</i>
15. Leaves succulent, farinose, hastate, plants prostrate.....	<i>Monolepis</i>
15. Leaves not succulent, often (not always) farinose, stems erect.....	<i>Chenopodium</i>

***Atriplex* "saltbush, shadscale"**

The genus *Atriplex* is a complex one that covers shrubs and herbs. It reaches a wide extent in the Great Basin deserts of Nevada and Utah where shrub species are the dominant community type. In our area, the shrubs are relatively few and easily distinguished; the herbaceous species more abundant and something of a challenge! This genus is poorly collected in our region, and more species are likely to be present here; see Colorado floras to check for other possible species when in doubt. See also *Chenopodium*!

**SPECIES THAT ARE CLEARLY SHRUBBY**

*Atriplex canescens* (Pursh) Nutt.

**Plants** medium sized to tall shrubs, dioecious with male and female plants. Leaves narrowly lanceolate, grey green. Female flowers with fruit bracts spreading widely, forming four "wings".

**Habitat:** Mesas, plains, lower grasslands.

**Notes:** An abundant shrub in the lower elevations in dry areas, especially around the mesas and in the Arkansas River Valley. This is the "four wing saltbush", its name taken from the characteristic bracts on the female bushes.

*Atriplex confertifolia* (Torrey & Fremont) S. Watson

**Plants** medium sized shrubs, noticeably spiny, leaves typically ovate, sometimes more oblong. Plants often very unpleasantly smelly, like selenium.

**Habitat:** Plains and grasslands, most commonly in Pueblo and Fremont Counties.

**Notes:** Look for the spines, the rounded leaves and the bad smell.

SPECIES WITH WOODY BASES ONLY, NOT CLEARLY SHRUBBY

*Atriplex gardneri* (Moquin) Standley

**Plants** with woody bases and herbaceous upper stems; stem and branches greyish to white scurfy, leaves white or grayish. Flowers in long terminal spikes, fruit a berry-like utricle.

**Habitat:** Plains, Arkansas River drainage.

**Notes:** Relatively uncommon in our area, known from Pueblo -Cañon City.

SPECIES HERBACEOUS THROUGHOUT

*Atriplex argentea* Nuttall

**Plants** with thick, triangular leaves, veins pinnate. Plants very greyish or silvery pubescent, especially on lower leaf surfaces. Bracts irregularly toothed at apex (use lens).

**Habitat:** Alkaline flats, pond margins at low elevations.

**Notes:** Look for the thick leaves and pinnate veins. Close to *A. powellii*, which lacks leaf succulence and has 3 veins in a leaf.

*Atriplex patula* L.

**Plants** greenish, farinose or lacking farina, bracts rhombic to rhombic ovate, leaves oblong to triangular hastate (arrowhead shaped at base).

**Habitat:** Adventive species occurring in disturbed areas.

**Notes:** Look for the lack of meal and the hastate (arrowhead shaped) leaf lobes.

*Atriplex powellii* S. Watson

**Plants** with oval, nonsucculent leaves, veins 3, prominent. Plants farinose. Bracts smooth at the apex.

**Habitat:** Roadsides, barrens, Arkansas River region, especially between Pueblo and Cañon City but also occurring in s. El Paso Co.

**Notes:** Look for the oval leaves.

*Atriplex rosea* L.

**Plants** farinose, leaves coarsely dentate, bracts becoming very hard.

**Habitat:** Adventive species, roadsides.

**Notes:** Look for the hard bracts around the flowers and coarsely dentate leaves.

*Atriplex hortensis* is a common garden weed that occurs here but is not typically naturalized outside of gardens. It is distinguished by the erect stem, broad, triangular leaves with hastate bases, and the stems that turn reddish purple.

***Axyris* "Russian pigweed"**

*Axyris amaranthoides* L.

**Plants** annual, with whitish green stems erect, branched, to 1 m or taller. Leaves ovate to lanceolate, flowers monoecious, with male flowers surrounded by paper sepals and female flowers green, in the leaf axils or mixed with male flowers.

**Habitat:** Roadsides, fields, disturbed areas.

**Notes:** Adventive species, relatively uncommon here. Look for a whitish green stem.

## *Bassia*

*Bassia hyssopifolia* (Pallas) Kuntze

**Plants** much branched annuals, to 1 m. Leaves very small, lanceolate, flowers in leaf axils; sepals with distinctive hooked spines.

**Habitat:** Disturbed areas, lowlands and agricultural regions.

**Notes:** Similar to the abundant *Kochia*, but with hooked spines on the sepals.

## *Chenopodium* "lamb's quarters"

There are many species in this very common genus, some of which are quite distinctive, but some are not. Be careful about confusion with *Atriplex*: *Chenopodium* has perfect flowers (you will need a good lens or microscope)! Fruits are often necessary for positive identification.

*Chenopodium album* L.

**Plants** annual, from relatively short to 1 m or taller; extremely variable! Leaves farinose below, petiolate, with dentate-undulate margins, shape highly variable, ranging from lanceolate to rhombic; often with reddish purple blotches. Flower clusters terminal, at the end of branches.

**Habitat:** Disturbed areas.

**Notes:** Adventive species, an extremely common and variable weed. See *C. berlandieri*.

*Chenopodium atrovirens* Rydberg

**Plants** annual, stems relatively thick, to 0.5 m, erect, much branched. Leaves relatively thick, ovate to oblong, margins entire, slightly farinose when young, lacking farina in age.

**Habitat:** Roadsides, disturbed areas, in sandy soils

**Notes:** Relatively uncommon or undercollected here, but probably present throughout our region.

*Chenopodium berlandieri* Moquin

**Plants** annual, pale, and farinose in appearance; stems to 1.5 m tall, erect, often branched. Leaves to 4 cm, ovate, elliptic, or rhombic (diamond shaped), usually broadly cuneate (wedge shaped) at the base, pale above, farinose below.

**Habitat:** Disturbed areas, roadsides, meadows.

**Notes:** A native species, very similar to *C. album*. *C. berlandieri* has fruits that are not honeycombed in appearance, unlike *C. album* which does have distinctly reticulate fruits.

*Chenopodium capitatum* (L.) Ascherson

**Plants** annual, leaves green, farinose, triangular, coarsely dentate. Flowers in dense, round clusters, becoming bright red at maturity.

**Habitat:** Roadsides and trails, middle elevations.

**Notes:** Adventive species, distinctive with the bright red clusters that give the name "strawberry blite".

*Chenopodium cycloides* A. Nelson

**Plants** delicate annuals, to 1 m in height, little branched. Flowers in small clusters, throughout the stem. Each flower surrounded by a wavy collar composed of fused sepals that enlarge with age.

**Habitat:** Open sandy areas, plains.

**Notes:** Apparently rare or overlooked; very similar to *C. subglabrum*, which lacks the distinctive "collar". Look also for the bright red centers on ripe fruits.

*Chenopodium denticatum* A. Nelson

**Plants** annual, to 10 cm; leaves linear to ovate lanceolate, green above, densely white farinose below. Flowers in dense clusters.

**Habitat:** Disturbed dry areas, roadsides, usually at lower elevations.

**Notes:** Look for the short stems and dense farina on the lower sides of leaves.

*Chenopodium foliosum* (Moench) Ascherson

Syn. *Chenopodium overi*, *Blitum virgatum*

**Plants** annual, leaves green, farinose, flowers in tiny clusters that remain green; clusters in terminal spike interspersed with leafy bracts. Leaves usually rounded to ovate.

**Habitat:** Middle elevations.

**Notes:** Similar to *C. capitatum*, but more slender and without the red flower clusters.

*Chenopodium fremontii* S. Watson

**Plants** relatively slender, stems weak, green to slightly farinose. Leaves broad, with rounded apex and basal lobes. Flower clusters small, in interrupted spikes.

**Habitat:** Piñon-juniper woodlands, foothills, and lower elevations.

**Notes:** Native species, one of the few *Chenopodiums* that occur in the dry oak or piñon woodlands of the southern portion of our range.

*Chenopodium glaucum* L.

**Plants** erect or prostrate, branched from the base, stems stout. Leaves obovate to oblong, margins sinuate dentate to entire, farinose below when young. Inflorescences in interrupted terminal spikes.

**Habitat:** Moist pond shores, lower elevations.

**Notes:** One of the few species in the genus that occurs in moist habitats.

*Chenopodium incanum* (Watson) Heller

**Plants** relatively low, less than 0.5 m, branched from the base and forming an inverted triangle. Leaves narrowly lanceolate-elliptical, white farinose below. Fruits with the sepals covering them almost entirely.

**Habitat:** Moist clay or sandy soils, often in playa basins on the plains.

**Notes:** Look for the low branched growth habit and the moist habitat. Usually visible late in the season as the plains dry out.

*Chenopodium leptophyllum* (Nuttall ex Moquin) S. Watson

**Plants** with erect stems, to 0.5 m., somewhat delicate in appearance. Leaves narrowly oblong, with a single main vein, not white below.

**Habitat:** Plains grasslands, piñon-juniper woodlands.

**Notes:** Common in the southern portion of our region.

*Chenopodium pratericola* Rydberg

**Plants** with thin stems, to 80 cm, much branched. Leaves narrow, bases often hastate (arrowhead shaped), main veins 3, lower surfaces often bright green with dense farina.

**Habitat:** Plains.

**Notes:** Differing from *C. leptophyllum* in the number of veins and in having farina.

*Chenopodium simplex* (Torrey) Rafinesque

Syn. *Chenopodium hybridum* spp. *gigantospermum*

**Plants** to 1 m, erect, much branched. Leaves broadly triangular to ovate, farinose, often subcordate at the base, with prominent teeth on the margin.

**Habitat:** Foothills canyons.

**Notes:** Uncommon in our region. Look for the large, toothed leaves.

*Chenopodium subglabrum* (Watson) Nelson

**Plants** relatively delicate, stems erect little branched. Leaves with 1 main vein, narrowly oblong.

**Habitat:** Sandy areas on the plain.

**Notes:** Similar to the more rare *C. cycloides*, but lacking that species distinctive fused sepals.

*Chenopodium watsonii* A. Nelson

**Plants** somewhat unpleasantly aromatic (like air from an old tire), stems to 80 cm, much branched. Stems densely farinose, 1-4 cm long and equally wide, rounded deltoid, margins entire or with 1-2 large teeth on 1 side, farinose on both surfaces. Fruits white.

**Habitat:** Plains.

**Notes:** Uncommon or little collected here but common on the eastern plains.

Several other species of *Chenopodium* may occur here as adventive species or as natives, though they have not yet been definitively found in our region. Many of these are described in detail in other floras for Colorado and for the Great Plains.

***Corispermum* "bugseed, tickseed"**

*Corispermum americanum* (Nuttall) Nuttall

**Plants** annual, stems to 50 cm tall, branched. Stems glabrous, ascending. Leaves linear. Flowers in leaf axils, subtended by a bract. Fruits prominently winged.

**Habitat:** Sandy areas on the plains.

**Notes:** Uncommon or little collected. Look for the glabrous stems and wide wings on the fruits to distinguish this species from *C. villosum*.

*Corispermum villosum* Rydberg

**Plants** annual, stems 5-20 cm tall, much branched at least in age. Stems strongly villous. Leaves linear, cuspidate, pubescent. Flowers perfect, subtended by leaf-like scarious (transparent) margined bracts; fruits narrowly winged. Plants somewhat inconspicuous.

**Habitat:** Plains, especially on dunes and sandy blowouts.

**Notes:** Uncommon or little collected; look for the long villous hairs.

***Cycloloma* "winged pigweed"**

*Cycloloma atricplifolium* (Sprengel) Coulter

**Plants** annual, with delicate, diffusely branching stems, to ca 0.5 m. Leaves narrowly oblong to lanceolate, irregularly sinuate on the margins, with teeth having a mucronate apex. Leaves dropping in age, and plants becoming a bright red color, acting as tumbleweeds.

**Habitat:** Sandy areas, plains.

**Notes:** A beautiful late summer plant, adding a delicate red splash on the roadsides.

***Halogeton***

*Halogeton glomeratus* (Bieberstein) Meyer

**Plants** annual, stems low, to 30 cm, branched from the base and quite red in color. Leaves cylindrical, succulent, with a sharp bristle tip.

**Habitat:** Adventive species of wet, alkaline ground.

**Notes:** Recently found in Pueblo, otherwise common on the west slope. A problematic weed to eradicate and one of our noxious species. Look for the distinctive bristle-tipped, succulent leaves.

***Kochia* "burning bush"**

*Kochia scoparia* (L.) Schrad.

Syn. *Kochia sieversiana*, *Bassia sieversiana*

**Plants** tall, bushy branched annuals, to 2 m. Leaves alternate, thin, lanceolate. Flowers clustered in leaf axils, gray tomentose in age. Plants turning reddish purple then brown in age, becoming our most abundant tumbleweed.

**Habitat:** Extremely abundant plant in all disturbed habitats, especially along roadsides and railroad tracks.

**Notes:** Somewhat similar to the much less abundant *Bassia hyssopifolia*, which has spines on the sepals.

***Krascheninnikovia* "winterfat"**

*Krascheninnikovia lanata* (Pursh) Meeuse & Smit

Syn. *Eurotia lanata*, *Ceratoides lanata*

**Plants** suffrutescent, with woody bases and herbaceous stem tips, forming low clumps to 1.5 m. Leaves densely stellate tomentose, lanceolate oblong, margins slightly revolute.

**Habitat:** Mesas, lower foothills, plains.

**Notes:** A very common species on the mesas, often mistaken for a sagebrush, but lacking the sage aroma. One of our more difficult genera to spell but easy to identify. Look for the large grey green clumps.



***Monolepis* "poverty weed"**

*Monolepis nuttalliana* (Schultes) Greene

**Plants** low, branched from the base and somewhat sprawling or prostrate. Leaves succulent, prominently hastate (arrowhead shaped) at the base, to 3 cm long. Flower clusters in the leaf axils, flowers with 1 sepal, petals lacking.

**Habitat:** Pond margins, muddy areas on the plains to upper elevations.

**Notes:** Look for the succulent leaves with prominent basal lobes.

***Salsola* "Russian thistle"**

Next to *Kochia*, *Salsola* forms our most abundant tumbleweeds. When young, they resemble each other, but *Salsola* becomes very sharp and spiny to the touch. When young, *Salsola* has a stiffer feel to the stem and leaves. Both are problematic weeds occurring on roadsides and disturbed open soils.

*Salsola tragus* L.

Syn. *Salsola australis*

**Plants** forming pyramid-shaped tumbleweeds, bracts broad based with flaring spiny tips. Branches very stiffly spreading.

**Habitat:** Disturbed areas, roadsides, adventive species from Asia.

**Notes:** Our most abundant *Salsola*, very spiny in age.

*Salsola collina* Pallas

**Plants** forming pyramidal tumbleweeds, bracts with narrow bases, tips curving inward. Branches arched and curving upwards. Inflorescence dense, not interrupted.

**Habitat:** Disturbed areas, roadsides.

**Notes:** Apparently much less common than *S. tragus*.

***Sarcobatus* "greasewood"**

*Sarcobatus vermiculatus* (Hooker) Torrey

**Plants** tall spiny shrubs, to 2 m. Leaves narrowly linear to oblong, up to 2 cm long, flowers subtended by peltate bracts.

**Habitat:** Dry alkaline soil on the plains, southern part of our range.

**Notes:** A ubiquitous shrub of the badlands of the Great Basin, but relatively constrained here, most common in the Chico Basin area and Arkansas River drainage. Look for the spiny twigs and grey green leaves.

***Suaeda* "sea-blite"**

*Suaeda calceoliformis* (Hooker) Moquin

**Plants** annual, stems decumbent, branched from the base and somewhat stout, to 30 cm, often less. Leaves linear, cylindrical, succulent. Flowers usually in leaf axils, with a conical outgrowth on the tepals, flowers appearing contorted.

**Habitat:** Saline areas, muddy pond margins and seeps on the plains.

**Notes:** An indicator of salty conditions, one of the few plants that can tolerate salt flats. The species are difficult to distinguish, and in many extreme habitats the plants do not develop fully.

*Suaeda nigra* (Rafinesque) Macbride

**Plants** annual, stems usually erect, somewhat branched, to 80 cm, often less. Leaves linear, narrowed at the base and somewhat flattened. Flowers in leaf axils, lacking conical outgrowth on the tepals.

**Habitat:** Saline areas, muddy pond margins and seeps on the plains.

**Notes:** More upright than the common *S. calceoliformis*, leaves flatter, tepals lacking conical outgrowth.

***Suckleya***

*Suckleya suckleyana* (Torrey) Rydberg

**Plants** low, prostrate and spreading, succulent. Leaves long petiolate, blades orbicular to ovate, margins coarsely toothed.

**Habitat:** Muddy, alkaline areas on the plains.

**Notes:** Look for the rounded leaf shape and the succulent vegetative growth.

### *Teloxys* "wormseed"

*Teloxys botrys* (L.) Weber

Syn. *Chenopodium botrys*; *Dysphania botrys*

**Plants** annual, aromatic, densely glandular pubescent throughout, stems much branched, to 0.5 m. Leaves oblong or oval, margins irregularly sinuate to pinnatifid. Sepals lacking gold glands (use a lens) and hornlike appendage.

**Habitat:** Adventive species of roadsides, plains to foothills.

**Notes:** Look for the sticky glandular hairs and note the smell.

*Teloxys graveolens* (Willd.) W.A. Weber

Syn. *Dysphania graveolens*

**Plants** annual, aromatic, with sparsely hairy glandular stems. Sepals with golden glands. Leaves mostly pinnatifid (divided to the midrib).

**Habitat:** Sandy soils, often around pinyon and juniper.

**Notes:** Look for the gold glands (use a lens).

### **Cistaceae: Rock Rose Family**

This Mediterranean family is represented here by only a single, rare species. The upper flowers look somewhat like a *Potentilla*, but the lower ones are cleistogamous and do not open.

### *Helianthemum* "frostweed"

*Helianthemum bicknellii* Fernald

Syn. *Crocianthemum bicknellii*

**Plants** relatively short, with a cluster of wiry stems to about 30 cm. Leaves ovate-elliptic, alternate. Flowers of two types: upper ones yellow, to about 1 cm, stamens many; lower flowers cleistogamous, small, and crowded on short axillary branches. Can be locally abundant in open sandy soils.

**Habitat:** Open ridges in ponderosa pine forests, especially in the Black Forest region.

**Notes:** Easily overlooked species, currently considered somewhat rare. Look for the stem cluster and alternate elliptical leaves.

### **Commelinaceae: Dayflower Family**

This Monocot family is characterized by having 3 petals and 3 sepals, with quite showy flowers. They provide a blue or purple blast of color in arid landscapes.

#### *Key to the Genera*

1. Petals blue or blue and white, flowers enclosed in a sheathing bract.....*Commelina*
1. Petals purple, flowers not enclosed in a sheathing bract.....*Tradescantia*

### *Commelina* "dayflower"

*Commelina dianthiflora* Delile

**Plants** with flowers with 3 sky blue petals, on short pedicels and hooded by a folded, sheathing bract. Stems relatively low, usually less than 10 cm.

**Habitat:** Canyons off CO115, lower foothills west of Colorado Springs, oak thickets and outcrops.

**Notes:** Uncommon or easily missed in our region, but locally abundant where it does occur. The bright blue flowers are very distinctive. Look for the all blue petals.

*Commelina erecta* L.

**Plants** with flowers with 2 blue petals and 1 white petal, on short pedicels and hooded by a folded, sheathing bract. Sheaths with white, marginal hairs.

**Habitat:** Gulches, foothills, southern portion of our region and Cañon City.

**Notes:** Apparently uncommon or rare here at the edge of its range. Look for the bicolored petals.

### *Tradescantia* “spiderwort”

*Tradescantia occidentalis* (Britton) Smyth var *scopulorum* (Rose) Anderson & Woodson

**Plants** with erect stems, to 0.5 m, usually shorter. Stem and leaves somewhat succulent, leaves glaucous. Petals purple, flowers to about 1 cm in diam., showy, on long pedicels from leaf axes.

**Habitat:** Mesas, grasslands, lower foothills.

**Notes:** A common grassland and mesa species, very drought tolerant and showy. Different soil pH may make the flower color vary from pink to purple.

### **Convolvulaceae: Morning Glory Family**

The classic garden morning glory, with its funnel-shaped flowers and twining growth habit typifies this family. One of our representatives, *Evolvulus*, does not grow as a vine, however, and its flowers are very inconspicuous. Be careful on 1 trick species: *Euploca*, a white-flowered member of the Borage family occurring in sand dunes on the plains, looks like a tiny morning glory at first glance!

#### *Key to the Genera*

- 1. Leaves linear, glabrous.....*Ipomoea*
- 1. Leaves not linear, or if so, with hairs.....2
  
- 2. Plants not twining vines, leaves elliptic, densely gray pubescent.....*Evolvulus*
- 2. Plants twining vines, plants not as above.....3
  
- 3. Plants yellow, stringy vines.....*Cuscuta*
- 3. Plants not as above.....4
  
- 4. Calyx subtended by 2 large bracts; flowers over 3 cm long.....*Calystegia*
- 4. Calyx not subtended by bracts; flowers less than 3 cm long.....*Convolvulus*

### *Calystegia* “hedge bindweed”

*Calystegia sepium* (L.) R. Brown ssp *angulata* Brummitt

**Plants** large, twining vines often covering fences and hedgerows; leaves hastate (arrowhead shaped) at base, 2-angled; flowers very large, 3-5 cm long, pink, with 2 ovate bracts below.

**Habitat:** Grasslands, lower foothills, usually growing on other plants.

**Notes:** Adventive species, uncommon in our region and not problematic like *Convolvulus arvensis*.

### *Convolvulus* “bindweed”

*Convolvulus arvensis* L.

**Plants** low, twining vines, often forming mats along roadsides or growing on other plants; leaves about as broad as long, hastate at the base. Flowers usually less than 3 cm long, pink to white, lacking bracts below; sepals glabrous or only slightly pubescent.

**Habitat:** Grasslands, roadsides, gardens, and disturbed areas.

**Notes:** A problematic and abundant adventive species and major garden pest.

*Convolvulus equitans* Bentham

**Plants** low, twining vines, often forming mats along the highways or roadsides, leaves long and narrow, hastate (arrowhead shaped) at the base. Flowers less than 3 cm long, pink to white, lacking bracts below; sepals densely pubescent.

**Habitat:** Grasslands, mesas, roadsides, particularly common in Fremont and Pueblo Counties.

**Notes:** Somewhat less invasive than *C. arvensis*. Look for the more narrow, very hastate (arrowhead shaped) leaves.

### *Cuscuta* “dodder”

This parasitic group of species is very obvious due to its orange color and strangling growth habit. Some botanists place dodders in their own family, the Cuscutaceae, and some treat the group under two generic names, *Cuscuta* and *Grammica*, which differ in style shape. Since the characters are hard to distinguish and flowers are very small or lacking, our species are treated here as *Cuscuta*.

*Cuscuta indecora* Choisy

Syn. *Grammica indecora*

**Plants** stringy orange vines, almost always covering other species. Flowers inconspicuous, tube longer than the calyx, lobes not reflexed.

**Habitat:** Plains grasslands.

**Notes:** Relatively uncommon; our collections known from the Falcon-Peyton area. Look for the corolla tube slightly longer than the calyx and flat, not reflexed petals.

*Cuscuta umbellata* Kunth

Syn. *Grammica umbellate*

**Plants** stringy orange vines, covering other plants. Flowers inconspicuous, tube enclosed by the calyx, lobes reflexed.

**Habitat:** Plains grasslands.

**Notes:** Uncommon, known from the Chico Basin area of Pueblo Co. Look for the reflexed corolla lobes and short tube, engulfed by the calyx.

### *Evolvulus*

*Evolvulus nuttallianus* Schultes

**Plants** with clumps of stems to about 30 cm; leaves elliptical, densely gray pubescent. Flowers small, inconspicuous, purple, occurring singly in the leaf axils.

**Habitat:** Dry grasslands, plains and barrens.

**Notes:** A common and distinctive species, but very unlike the other members of the family here.

### *Ipomoea* “morning glory”

*Ipomoea leptophylla* Torrey

**Plants** forming bushy, sprawling mounds. Leaves narrow, linear-lanceolate. Flowers very large, over 5 cm long; conspicuous red-purple.

**Habitat:** Plains, mesas, often in sandy or gravelly areas.

**Notes:** A beautiful conspicuous summer wildflower in the lower elevations; common throughout our region, esp. in southern El Paso Co., and Pueblo Co. Look for the huge flowers and clumped growth.

The common garden morning glory, *Ipomoea purpurea*, is occasionally naturalized here in small clumps.

## **Cornaceae: Dogwood Family**

The dogwoods are typified by the wellknown horticultural trees of the south, the flowering dogwoods. Our two native species are less showy, but have similar 4-parted flowers (not composed of petals, but actually of petal-like bracts) and opposite, prominently pinnate veined leaves.

*Cornus canadense* L.

Syn. *Chamaepericlymenum canadense*

**Plants** herbaceous, slightly woody at the base; stems to about 20 cm tall, bearing 4 leaves that appear whorled. Leaves ovate-elliptic, prominently veined, 2-8 cm long. Flowers white, composed of petaloid bracts; berry red.

**Habitat:** Moist forests, foothills.

**Notes:** A boreal forest species that is uncommon in our dry region; most abundant in the moist foothills west of Palmer Lake, often growing under conifers.

*Cornus sericea* L.

Syn. *Swida sericea*

**Plants** medium sized shrubs, to 2 m; branches many, forming dense thickets. Stems red, leaves opposite. Flowers white to creamy, fruit a white berry.

**Habitat:** Streamsides in the foothills.

**Notes:** Always found near running water, look for the red stems and opposite leaves.

## Crassulaceae: Stonecrop Family

This family is one of our succulents families (other common ones are the Portulacaceae and the Cactaceae).

### Key to the Genera

- 1. Flowers yellow, leaves very succulent, rounded in cross section.....*Sedum*
- 1. Flowers pink, red, or white, leaves not as above.....*Rhodiola*

### *Rhodiola* “king’s crown, queen’s crown, rose crown”

*Rhodiola* can be easily divided into the *Clementsia* type with bisexual (perfect) pink flowers and prominent midrib on the leaves, and the *Rhodiola* type, with red to maroon purple unisexual flowers and leaves that lack a prominent midrib.

#### *Rhodiola integrifolia* Rafinesque

**Plants** to about 20 cm, leaves elliptical, bearing flower clusters at the tip of the stem, not prominently ribbed below. Flowers deep maroon red.

**Habitat:** Alpine and subalpine meadows.

**Notes:** Look for the maroon flower color and the lack of a prominent midrib on the underneath surface of the leaves. A common high elevation species.

#### *Rhodiola rhodanthum* (A. Gray) Jacobsen

Syn. *Clementsia rhodantha*

**Plants** to about 20 cm., leaves elliptical, bearing flower clusters in the upper part of the stem, and ribbed below. Flowers pink or white.

**Habitat:** Moist subalpine meadows.

**Notes:** Look for the pink color to distinguish this from *Rhodiola integrifolium*. One of our beautiful moist meadow species; very showy in July.

### *Sedum* “stonecrop”

#### *Sedum lanceolatum* Torrey

Syn. *Amerosedum lanceolatum*

**Plants** low, stems less than 10 cm. Leaves very fleshy, cylindrical in cross section, closely packed on the stem. Flowers yellow, star-shaped.

**Habitat:** Rocky, stony or open areas from the plains to the tundra.

**Notes:** An extremely common species with a wide elevational range. The bright yellow flowers of summer are quite showy, but otherwise the plant is inconspicuous.

## Cucurbitaceae: Squash Family

All gardeners who have grown pumpkins, squash, cucumbers, zucchini or melons will recognize this family: sprawling vines, broad leaves, big, unisexual, funnelform flowers.

### Key to the Genera

- 1. Plants huge, trailing vines on the ground, leaves rough pubescent, fruit a gourd.....*Cucurbita*
- 1. Plants climbing vines, leaves not rough pubescent, fruit papery and balloonlike.....*Echinocystis*

### *Cucurbita* “buffalo gourd”

#### *Cucurbita foetidissima* Humboldt, Bonpland, & Kunth

**Plants** sprawling vines, leaves very large, to 20 cm or more broad, entire, harshly pubescent. Flowers orange-yellow, to 10 cm long, female flowers becoming greenish, dry gourds.

**Habitat:** Roadsides, dry disturbed areas.

**Notes:** A native species, very common roadside plant in Fremont and Pueblo Counties; less common but not rare in El Paso Co.

***Echinocystis* "wild cucumber"**

*Echinocystis lobata* (Michaux) Torrey & Gray

**Plants** climbing vines; leaves palmately lobed, with 3-5 triangular lobes. Flowers greenish white, female ones solitary or in small clusters, forming an ovoid, inflated prickly fruit.

**Habitat:** Plains, southern portion of our region.

**Notes:** Plants showing little resemblance to a cucumber; look for the inflated prickly fruits.

**Dipsacaceae: Teasel Family**

This family is the only other one in our flora besides the Asteraceae to have a "head" inflorescence. Our species is very distinctive, with prickly 4-angled stems, purple flowers in the head, and a sharp head with sharp bracts remaining after flowering.

*Dipsacus fullonum* L.

Syn. *Dipsacus sylvestris*

**Plants** biennial, stems very tall, to over 3 m, stems 4-angled, harshly scabrous-prickly; leaves opposite, lobed, sessile, bases joined, forming a "moat" that collects water. Flowers purple, in a ovoid or cylindrical head.

**Habitat:** Wetlands, moist swales, and streamsides, especially common along Fountain Creek.

**Notes:** Although attractive to insects, "teasel" is a problematic invasive species here in wetlands and along streams.

*Dipsacus laciniatus* L.

**Plants** biennial, stems to 3 m, leaf bases joined, forming a moat that collects water. Leaves deeply divided to midrib (pinnatifid). Flowers purple, in an ovoid to cylindrical head.

**Habitat:** Wetlands, moist swales and streamsides. Known here from Fort Carson area.

**Notes:** Not yet abundant here but a problematic weed likely to spread. Look for the deeply divided leaves.

**Elaeagnaceae: Oleaster Family**

This family is generally composed of shrubs with leaves characterized by silvery scales and hairs. The fruit looks berry-like, but is actually composed of a swollen calyx that becomes the berry wall and the interior portion is an achene.

*Key to the Genera*

- 1. Leaves opposite, plants low shrubs, dioecious.....*Shepherdia*
- 1. Leaves alternate, plants tall shrubs or small trees, flowers usually perfect.....*Elaeagnus*

***Elaeagnus* "Russian olive, silverberry"**

*Elaeagnus angustifolia* L.

**Plants** tall shrubs or small trees, branches usually thorny. Leaves alternate, lanceolate, longer than wide, usually less than 2 cm wide; branches and leaves silvery in appearance.

**Habitat:** Adventive species, very common along roadsides, river and stream banks, especially common on the plains.

**Notes:** A somewhat invasive species now dominating riverbanks and displacing native shrub species that provide important bird habitat. The silvery leaves and stems are very distinctive.

*Elaeagnus commutata* Bernhadi

**Plants** tall shrubs, branches not thorny. Leaves alternate, broadly lanceolate, usually over 3 cm wide; branches with brown scales.

**Habitat:** Known in small patches from the Florissant area.

**Notes:** Probably not native here, and not spreading beyond a limited area in Teller County.

***Shepherdia* "buffalo berry"**

*Shepherdia canadensis* (L.) Nuttall

**Plants** low shrubs, leaves opposite, green, broadly elliptical with prominent rusty brown scales. Fruits orange red.

**Habitat:** Pine forests, rocky slopes.

**Notes:** Uncommon overall in our region, except for Fremont Co., where it is abundant. Look for the scaly leaves.

**Elatinaceae: Waterwort Family**

This small family of tiny, pond-shore plants is often overlooked and not well represented in our region. The genera and species resemble other tiny semi-aquatic species in other families, so look closely! These have opposite or verticillate leaves that are entire and subtended by small stipules. Flowers are axillary.

*Key to the Genera*

- 1. Plants erect, glandular pubescent throughout, sepals and petals 5.....*Bergia*
- 1. Plants creeping, not glandular, sepals 2, petals 3.....*Elatine*

***Bergia***

*Bergia texana* (Hooker) Seubert

**Plants** low, somewhat erect, notably glandular, sepals 5, with prominent scarious (transparent) margins and midrib.

**Habitat:** Pondshores, low elevations.

**Notes:** Apparently rare, known from only a few old collections in Colorado; reported but unverified from the Air Force Academy.

***Elatine* "waterwort"**

*Elatine rubella* Rydberg

Syn. *Elatine triandra*

**Plants** low, creeping, leaves spatulate, glabrous. Flowers whitish, sepals 2 and petals 3.

**Habitat:** Pond-shores, muddy banks, shallow water, plains to lower foothills regions.

**Notes:** Resembles *Callitriche*, but less delicate in appearance. Probably very under-collected.

**Ericaceae: Heath Family**

This family, which includes the familiar blueberry, azalea, rhododendron, and heather, is very in the cool climates of the Northwest and Northeast. In our area, we have few representatives, but the abundant *Arctostaphylos* is a notable component of the understory in our pine forests. Some botanists place the related Wintergreen family Pyrolaceae (*Pyrola*, *Moneses*, *Chimaphila*) under a more inclusive Ericaceae, but it is are separated here (See **Pyrolaceae**). In the Ericaceae here, look for the oval, leathery leaves, and small bell shaped flowers for our genera. Two genera, *Pterospora* and *Hypopitys*, are parasitic and lack chlorophyll.

*Key to the Genera*

- 1. Leaves thick, evergreen, berries red.....*Arctostaphylos*
- 1. Leaves not thick and evergreen.....2
- 2. Leaves scale-like, stem single, tall, plants lacking chlorophyll (not green).....3
- 2. Leaves ovate to elliptical, thin, green.....*Vaccinium*
- 3. Corolla with united petals, plant reddish brown.....*Pterospora*
- 3. Corolla with separate petals, plants yellowish or pinkish.....*Hypopitys*

***Arctostaphylos* "kinnickinnick, bearberry"**

*Arctostaphylos uva-ursi* (L.) Sprengel

**Plants** forming low spreading mats, leaves ovate elliptical, margins entire, somewhat yellowish green, leathery and evergreen. Berries dry, bright red.

**Habitat:** Abundant throughout the pine forests, foothills to middle elevations.

**Notes:** An important food source for animals in winter; one of the few understory plants in ponderosa forests.

***Hypopitys* "pinesap"**

*Hypopitys monotropa* Krantz

Syn. *Monotropa hypopitys*

**Plants** composed of a single stem, to 30 cm, pinkish or yellowish green, lacking chlorophyll. Flowers in a nodding terminal cluster, erect in fruit.

**Habitat:** Moist conifer forests.

**Notes:** Uncommon in our region, known from Cheyenne Mountain and the Palmer Divide area. Parasitic on conifers but not harmful. The stems are shorter and not distinctly red brown as in *Pterospora*.

***Pterospora* "pinedrops"**

*Pterospora andromedea* Nuttall

**Plants** composed of a single, somewhat tall (to 30 cm) stem, reddish brown, lacking chlorophyll. Flowers reddish, in a long raceme, somewhat nodding.

**Habitat:** Pine forests, common, but typically growing singly.

**Notes:** Parasitic on pine species, but not apparently harmful. Look for the distinctive red brown stem.

***Vaccinium* "blueberry, huckleberry"**

The genus *Vaccinium* is a common component of acidic soils in conifer forests and bogs of the northern U.S., and Canada. Several species occur in Colorado, and are abundant elsewhere in the state. Because of the aridity of our region, blueberries are uncommon here, generally found in moist ravines on north facing slopes, especially in the Palmer Divide area, but they also occur sporadically in cool shady moist sites on the Pikes Peak massif. Our species is *V.myrtillus*, but two other species occur just west of us in Park Co, and are possibly present in Fremont County. *Vaccinium caespitosum* has blue black berries and leaves that are toothed above the middle. *Vaccinium scoparium* has red-orange berries, and leaves with toothed margins along all the edges. These species are somewhat difficult to distinguish (perhaps through hybridization) typically occur above or near timberline.

*Vaccinium myrtillus* L.

**Plants** low and spreading, suffrutescent, to 30 cm tall. Stems greenish, leaves ovate to ovate elliptical, broadest at the middle or above, margins entire below and serrate above the middle. Fruits blue.

**Habitat:** Shady moist sites, often in cool conifer forests and montane ravines and canyons.

**Notes:** In our region, occurring only in unusually cool moist habitats in the foothills and north-facing slopes of Pikes Peak.

**Euphorbiaceae: Spurge Family**

The spurge family is large and diverse in the tropics but relatively limited here. Our representatives include some noxious weeds (*Euphorbia esula* and *E. myrsinites*), as well as some harmless native species. The family is one of a few with white milky "juice" (although not all species have milky juice) and the flowers are deeply modified and difficult to interpret. The flowers are much reduced, often to a single stamen or pistil, they typically lack sepals, and have colored glands rather than petals. Showy bracts are also common. Familiar cultivated representatives include poinsettia and crown of thorns. A *cyathium* is an inflorescence with a single ovary surrounded by several male structures and some (often showy) bracts.

**Key to the Genera**

- 1. Leaves silvery with minute stellate hairs (use lens).....*Croton*
- 1. Leaves not silvery with stellate hairs.....2



- 2. Upper leaves and bracts with prominent white margins.....*Agaloma*
- 2. Upper leaves and bracts lacking white margins.....3
- 3. Flowers with a true calyx, involucre lacking, leaves sharply serrate with stinging hairs.....*Tragia*
- 3. Flowers lacking sepals or petals, cyathium present (reduced flower cluster that mimics a single flower)  
.....4
- 4. Glands in the cyathium with petal-like appendages, leaf bases asymmetrical.....*Chamaesyce*
- 4. Glands in the cyathium lacking petal-like appendages.....*Euphorbia*

***Agaloma* "snow on the mountain"**

*Agaloma marginata* (Pursh) Löve & Löve

Syn. *Euphorbia marginata*

**Plants** annual, to 1 m tall, stems stout with milky juice. Flowers small, inconspicuous, white, in broad white margined bracts; leaves ovate, upper ones with white margins when mature (sometimes lacking the white margins when immature).

**Habitat:** Dry slopes, sandy areas, plains to lower foothills.

**Notes:** Common but scattered and rarely locally abundant, quite showy and distinctive with the white bracts.

***Chamaesyce***

This genus is composed of small, sprawling species of open, often sandy soils. They have petal-like appendages in the cyathium, so look like they have tiny white or pinkish flowers. The species are difficult to distinguish without ripe seeds; these ripen early and can often be found in a plant otherwise in flower.

*Chamaesyce glyptosperma* (Engelmann) Small

**Plants** annual, low and prostrate, stem and leaves glabrous. Leaves opposite, narrowly oblong to ovate, margins entire or serrulate to the apex. Seeds minutely pitted with transverse ridges.

**Habitat:** Open disturbed areas, low elevations.

**Notes:** A native species that acts weedy in disturbed sites. Look for the transverse ridges on the seeds to distinguish this from *C. serpyllifolia*.

*Chamaesyce missurica* (Rafinesque) Shinnars

**Plants** annual, low, erect or sprawling, stem and leaves glabrous. Leaves opposite, linear, entire. Seeds smooth.

**Habitat:** Plains, often in sandy soils.

**Notes:** Look for the linear leaves and smooth seeds.

*Chamaesyce serpyllifolia* (Persoon) Small

**Plants** annual, low, sprawling, stem and leaves glabrous. Leaves opposite, oblong to ovate, margins serrulate towards the apex. Seeds smooth.

**Habitat:** Open disturbed areas, low elevations.

**Notes:** Adventive species often found in gardens or along roads and sidewalks. Look for the smooth seeds to distinguish it from *C. glyptosperma*. The two species are otherwise very similar.

*Chamaesyce stictospora* (Engelmann) Small

**Plants** annual, low, sprawling, stem and leaves with short hairs. Leaves suborbicular to oblong linear. Seeds pitted.

**Habitat:** Plains.

**Notes:** Look for the hairs on the stem and leaves.

***Croton***

*Croton texensis* (Klotsch) Müller-Argoviensis

**Plants** annual, stellate pubescent, low and spreading, stems to 60 cm, usually less. Stem and leaves prominently stellate pubescent. Plants dioecious, flowers lacking petals.

**Habitat:** Sandy soils of the plains and especially common in the Arkansas valley.

**Notes:** The stellate pubescent is very distinctive.